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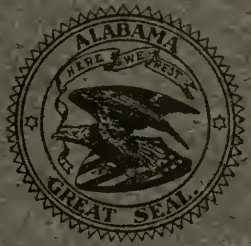
A MANUAL

FOR

COUNTY HIGH SCHOOLS



SEPTEMBER 20, 1914

Issued by
The Department of Education
Montgomery, Ala.

A MANUAL

FOR THE

COUNTY HIGH SCHOOLS OF ALABAMA

CONTAINING

RULES AND REGULATIONS, COURSES OF STUDY, ADOPTED TEXTS, TREATMENT OF THE SEVERAL SUBJECTS IN THE CURRICULA.

ISSUED BY

THE DEPARTMENT OF EDUCATION,
MONTGOMERY, ALABAMA,
SEPT. 20, 1914

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INTRODUCTORY STATEMENT

THE improvement of our county high schools involves the consideration of the pupil, the course of study, the teacher, and the organization for properly relating and carrying on the work. It is patent that a course of study which meets the needs of pupils today must offer preparation not merely for higher institutions of learning, but for successful living as well. The new course of study and the subsequent adoption of textbooks at a considerable reduction in prices, may justly be expected to increase the attendance in our secondary schools, and has made the preparation of a new manual an absolute necessity.

In going about this work of preparation, I have tried to keep in mind those whose formal education will be limited to the high school and who during this period must make all possible preparation for successful service in the various fields of practical life. This has meant that vocational training must have a place along with the traditional subjects in the high school course, and while I would not disparage the value of the time-honored subjects which are recognized as both intrinsic and disciplinary, I feel that no apology whatever is needed for breaking away from the confines of the past in the effort to make the high school work thoroughly consonant with the actual environment, the practical needs, and the social activities of the community.

I have thought it best to assign each subject to a member of the faculty of a higher institution of learning and a principal or teacher in a secondary school, with the request that each should treat the subject from his own viewpoint, and then collaborate their papers, believing that by so doing it would be feasible to simplify and modernize the course of study for our high schools without making the work too academic on the one hand or too independent on the other. After carefully examining the work that has been done and is presented herein, there can be no doubt that helps have been prepared definite in character, flexible enough to meet local

conditions, sufficient in detail for beginning high school teachers, and ample in scholarship for the most experienced teacher. Considerable emphasis has been placed upon original and independent work in the laboratory, in the field and in the library, looking continually toward the practical application of all subjects—even those of other days, to present-day needs and opportunities.

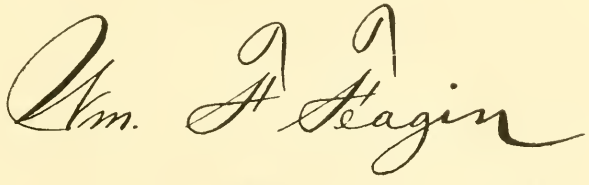
In furtherance of the spirit that has been implicit both in the conception and the preparation of this manual, it is confidently expected that the faculties of all the county high schools in the State will give themselves largely to extension work in behalf of the rural schools. A number of our county high schools have had sessions on Saturday and closed their doors on Monday in order that the teachers might visit rural schools in the county while in actual session, thereby rendering concrete assistance at the most opportune time and in the most helpful way.

To those who look out on Alabama's needs with any constructive policy for betterment, COMMUNITY ORGANIZATION looms large as the most hopeful avenue of relief. The individual community, however, will make slow, if any, progress without intelligent direction and cooperation. Each rural school is the common property of the community and the only agency that can lay claim to the undivided love and support of its members. Rural teachers must learn from the attitude and service of county high school teachers that they have unfailing friends who know and will to help them in this work of social and community uplift. We may be sure that rural teachers can never be taught to believe it so long as those who work in county high schools display an aloofness and a narrowness which limit their activity to the walls of the schoolroom or the boundaries of the town in which the high school may be located.

The high school is the property of the county,—of the entire county, and no high school principal or teacher has any conception of the call to service which comes to him by virtue of his position, unless he is willing to give his time, his effort, and his skill to the assistance of the humblest school in the remotest part of his county insofar as he may do so without neglecting his immediate duties in the high school. That the true spirit of service which will inspire every high school teacher in

Alabama to lay himself out in the unselfish task of bringing help and direction to the entire county, may grip our minds and wills with irrepressible power for the work we can and ought to do, is the ideal that I would have set up for our guidance in the work.

To the many friends who have assisted me in preparing this manual, I hereby acknowledge the deep obligation I owe. If, perchance, the fine spirit and skill which have been shown in the preparation of these articles shall find their counterparts and expression in the use and interpretation that is made of them, there can be no doubt that every school and every community in this commonwealth will glow with a new enthusiasm that will permeate the State to its uttermost bounds.



Superintendent of Education.

RULES AND REGULATIONS

ADOPTED BY

THE HIGH SCHOOL COMMISSION FOR THE GOVERNMENT OF THE COUNTY HIGH SCHOOLS OF ALABAMA.

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1. The county high school teachers, including the principal, shall be elected by the High School Commission and their salaries shall be fixed by the Commission. The county board of education shall have the right to nominate the principal of the county high school and the principal of the county school shall have the right to nominate the teachers for the county high school. The county board of education shall recommend the salaries to be paid the teachers, including the principal, but if the nominations and recommendations so made do not meet the approval of the High School Commission, said commission shall act independently of such nominations and recommendations, either or both.

2. The teachers of the county high school shall consist of a principal and two or more assistants. Provided, that no assistant in any county high school shall be elected to the principalship of any county high school in which he may have taught for any time during the twelve months immediately preceding the date of any election, and provided further, that no person living in a town or community in which a county high school is located shall be eligible for election to a position as assistant in that particular high school.

3. The principal shall be employed for twelve calendar months beginning July 1st and ending June 30th of the following year. He shall be paid by the calendar month and shall furnish a bond of $500.00 in a reputable bonding company within thirty days from the date of his election. Said bond must be approved by and filed in the office of the judge of probate of the county in which the high school is located, and a certified copy of said bond must be filed in the office of the Superintendent of Education at Montgomery (the expense of this bond to be a charge to the county high school).

4. The principal shall keep a matriculation book, adopted by the High School Commission, in which shall be placed the names of the pupils as they matriculate, giving the full name, home address, age, and the name and address of the parent, together with other desired information.

5. The teacher shall keep an accurate record of the recitations and conduct of the pupils, and at the end of each term make a general report of each pupil to the principal, who shall place this report on a general record book which shall be well bound and kept for future reference.

6. It shall be the duty of the principal on June 30th of each year to make an annual report on blanks furnished by the Department of Education. This report shall be made in duplicate, one copy being sent to the county superintendent and the other to the State Superintendent at Montgomery. It shall also be the duty of the principal to make reports from time to time when called for by the Department of Education.

7. It shall be the duty of the principal and assistants in each county high school to follow faithfully the course of study prescribed by the Superintendent of Education, in accordance with section 1866 of the Code.

This course of study shall be a four year course and shall be based on an elementary course of seven grades or years.

8. If the county board of education deems it expedient to allow the seventh grade to be taught in the county high school building as a preparatory grade to the regular high school course, as outlined by the High School Commission, such may be done, provided all teachers of this grade are elected and their salaries fixed in the same manner as the county high school teachers, and the necessary funds required to maintain this grade, in the way of salaries and incidentals, are provided by the county board of education and other local authorities; and provided further, the teachers and pupils of this grade shall be under the direct supervision of the principal and governed in accordance with the rules and regulations made by the High School Commission.

9. The county high school shall begin its annual session at such date as may be fixed by the county board of education, provided that the date of opening be not later than the third Monday in September.

10. The session of the county high schools shall be nine scholastic months (thirty-six weeks). The session is divided into two terms of four and one-half months each, and at the end of each term a general written examination shall be given to the pupils on the branches studied during the preceding term.

11. Applicants for admission to a county high school must present an elementary seventh grade certificate or take a written examination covering the elementary course of study and average not less than 60% on each subject. These papers must be filed for at least six months in the office of the principal of the county high school, provided that mature young men and young women not under 17 years of age and capable of doing efficient secondary work may be admitted without written examinations.

12. During the vacation period the principal shall canvass the county in the interest of the county high school, or perform any other school work that may be assigned to him by the High School Commission.

13. A pupil living in any county may attend the high school in another county without any additional charges for tuition, etc., but every pupil in the county high school must present to the principal his receipt at the beginning of each term of the session showing that an incidental fee of $2.50 has been paid to the local treasurer of the high school which he is to attend.

14. Every county high school must have a treasurer who shall be elected as the county high school principal is elected and who shall reside in the place where the school is located. He shall be elected for a term of three years and shall be required to make a bond of three thousand dollars in a reputable surety company; said bond must be approved by and filed in the office of the judge of probate of the county in which the high school is located, and a certified copy of said bond must be filed in the office of the Department of Education at Montgomery. The treasurer shall keep in a well bound book accurate accounts of all of his transactions and shall make such reports as may be required of him by the High School Commission. He shall keep an accurate account of receipts and disbursements of all moneys stating from what source they came and how disbursed, giving receipts and taking proper vouchers.

15. On the last day of each month the principal of the county high school shall deliver to the county high school treasurer a payroll in duplicate showing the amount due each teacher, janitor, and any other persons who have legitimate accounts against the high school. With the exception of the teachers and janitor, all persons shall present to the principal an itemized statement of the accounts against the school, in duplicate, before the principal shall be required to place the same on a monthly payroll. The county high school principal shall make out the monthly payroll in duplicate and shall be required to make the proper affidavit on the back of each payroll before delivering it to the county high school treasurer.

16. The county high school treasurer must pay every item with a bank check and place the proper check number in the "Check Number" column of both payrolls furnished him each month by the principal. He must make a general report of his receipts and disbursements on the blank form at the bottom of each monthly payroll, and after properly making the affidavit at the bottom of the payroll sheet he must forward one of the payrolls to the State Superintendent of Education at Montgomery so that it will reach the office within ten days after the payroll is submitted to the treasurer by the principal. The other payroll shall be kept on file in the office of the treasurer and in it shall be placed the cancelled checks paying the various items when these checks are returned to the treasurer.

17. The treasurer must make an annual financial report in duplicate on or before July 30th for the year ending June 30th immediately preceding. One of the reports shall be filed with the county superintendent and the other with the State Superintendent of Education at Montgomery.

18. The treasurer shall be paid no salary for his services, but the premium on the surety bond required of him and any incidental expenses connected with his official duties must be paid out of any funds belonging to the high school. Accounts covering such items shall be furnished the county high school principal in accordance with Rule 13 and shall be paid in the regular way.

19. The quarterly State appropriation of $150.00 shall be made payable to the order of the high school treasurer and shall be drawn on July 1, October 1, January 1, and April 1, of each year. The requisition for this appropriation shall be

made by the high school treasurer and sent to the State Superintendent in ample time for it to reach him each quarter before the dates mentioned. It shall be the duty of the State Superintendent to receipt the State Auditor for the warrant and to transmit it to the county high school treasurer.

20. Examinations must be held at the close of each term of four and one-half months by the high school teachers and at the close of the session a certificate shall be issued by the principal to each pupil who passes a satisfactory examination stating that such pupil has finished the work of a designated year and this certificate shall entitle the pupil to enter upon the work of the year next after that so designated in any county high school in the State.

21. In order to pass a satisfactory examination on any branch in the county high school, it is necessary for the pupil to make an average of not less than 65% during the first school year and not less than 70% on each branch during each and any year thereafter. This average shall be secured by averaging the grade made on the final examination with the daily recitation grades given, the final examination counting one-half and the daily recitations one-half. All examination papers shall be held for reference until January 1st of the succeeding year.

22. The county high school teachers shall hold teachers' meetings twice each month of the scholastic year, at which the teachers shall consider such matters as may tend to promote the progress of the students and the welfare of the school, including the methods of teaching the various high school subjects. Some professional book prescribed by the State Superintendent of Education shall also be studied uniformly by the faculties of the several county high schools and a portion of the regular teachers' meeting period shall be given to the discussion of topics taken from this book.

23. The High School Commission shall appoint Inspectors, who shall visit the various county high schools of the State, and after carefully inspecting them shall make a written report to the Secretary of the High School Commission.

24. The principal of each county high school is hereby authorized to make such rules and regulations as may be necessary to successfully control and discipline the school, provided

such rules and regulations shall in no way conflict with the rules and regulations made by the High School Commission.

25. It shall be the duty of the county high school treasurer to see that the county high school property is properly insured at all times. The building and equipment should be insured for their full value, and the premiums to cover the insurance should be paid in the regular way on a monthly pay roll out of any county high school funds. The insurance policies shall be made payable to the High School Commission of Alabama and the county high school treasurer shall be the custodian of the policies.

26. Certificates of graduation shall be issued to all pupils who complete, in a satisfactory manner, the prescribed course of study for the county high schools. The certificates must be purchased from the Marshall & Bruce Company, of Nashville, Tennessee, as a contract has been made with this company by the High School Commission to furnish these certificates at a minimum cost. The certificates must be signed by the State Superintendent of Education, the County Superintendent and the principal of the county high school.

27. The principal of each school shall keep a proper account of all financial obligations of the school, listing each individual or firm together with the amount due at the time the obligation is incurred, in such a way as to show at any time the actual and total outstanding indebtedness of the school. And any account not so included in the schedule of indebtedness shall not be a charge to the school but to the principal who shall be liable on his official bond therefor.

INSTRUCTIONS TO THE COUNTY HIGH SCHOOL PRINCIPAL AND COUNTY HIGH SCHOOL TREASURER

THE PRINCIPAL

1. The principal should study the rules and regulations governing the county high schools and comply with them in detail.

2. The county high school pay roll in duplicate should be made out by the principal on the last day of each month in the year, and the pay roll should be dated the last day of the calendar month for which it is made.

3. The principal is paid by the calendar month and his term of service begins July 1st of each year. The assistants are paid by the scholastic month and their terms begin at the opening of the school term.

4. Opposite the name of each assistant in the county high school between the words "Salary" and "Month," the words "First," "Second," "Third," "Fourth," "Fifth," "Sixth," "Seventh," "Eighth," and "Ninth," should be used in designating the months for which the assistant is paid during the school session.

5. The janitor should be appointed by the principal and he may be paid by the scholastic month or by the calendar month.

6. The principal shall make a requisition on the county high school treasurer before making any purchase or expenditure for his school. This requisition shall state specifically the purchases or expenditures which he desires to make during the month and shall give the amount of each.

7. The regular form of requisition book prepared by the State Superintendent shall be used and each requisition must be made in duplicate and both forms must be approved by the county high school treasurer. The original shall be filed by the treasurer and the duplicate approved by him shall be returned to the principal.

8. The requisition shall cover every item of expense which shall appear on the pay roll for each month except the salaries of the principal, teachers and janitor. Any principal who incurs any expense or makes any purchase without making a requisition to cover the same and having it approved by

the treasurer shall be personally liable for the account, should the high school treasurer decline to approve said purchase on the requisition presented for the following month.

9. The principal of each school shall keep a proper account of all financial obligations of the school, listing each individual or firm together with the amount due at the time the obligation is incurred, in such a way as to show at any time the actual and total outstanding indebtedness of the school. And any account not so included in the schedule of indebtedness, shall not be a charge to the school but to the principal who shall be liable on his official bond therefor.

10. If the principal desires to reimburse himself for incidentals paid by him, he should place his name on the pay roll for the amount and an itemized statement of the incidental account should be attached to the pay roll on file in the office of the high school treasurer.

11. When an account against the school is to be paid, the name of the party should be placed on the pay roll for the amount and an itemized statement of the account should be attached to the pay roll. The principal should make opposite the name of each party rendering the account, a general statement telling the character of the claim.

12. Each pay roll must be totalized and the total should be placed on the bottom line of the pay roll.

13. After properly making out the pay roll in duplicate and making the necessary affidavit on each, the principal should deliver the pay rolls to the county high school treasurer.

THE TREASURER

1. The treasurer should read carefully the rules and regulations governing the county high school and comply with them in detail, seeing that each payment is a legal one.

2. All county high school funds, including the State appropriation, town and county appropriations, matriculation, incidental fees, etc., must be placed in the hands of the county high school treasurer.

3. The treasurer should pay out no high school funds for any item until the item has been placed on the regular monthly pay roll and the pay roll has been properly sworn to by the principal.

4. All high school funds should be kept by the treasurer in a local bank or in the nearest if there is no local bank.

5. All items appearing on the pay roll should be paid by check and each check should be numbered, and the number of the check should be placed opposite the amount in "Check No." column.

6. Every county high school treasurer should have a well bound ledger record book, and he should copy each monthly pay roll in this book showing each item as it appears on the pay roll. He should carefully file each monthly pay roll. Every official letter received by the treasurer, and, if practicable, a copy of every official letter written by him, should be filed for future reference.

7. Some time between the 20th and 30th of each month, the treasurer should have his bank book balanced, and his bank account and school account in the ledger book kept by him, should be balanced at the same time. Checks returned by the bank should be filed in the proper pay roll and these cancelled checks will answer as vouchers.

8. The State Auditor's warrant for $750.00 is sent at the beginning of each quarter and is usable only for meeting liabilities which are made during and after that particular quarter. Deficits which appear at any time must be made up locally in some other way than that of waiting for the receipt of the State's quarterly payment. In other words, these schools must be kept out of debt.

9. The treasurer shall make a general report of his receipts and disbursements on the blank form at the bottom of each monthly pay roll and after properly making the affidavit at the bottom of the pay roll he must forward one of the pay rolls to the State Superintendent of Education at Montgomery so that it will reach the office within ten days after the pay roll is submitted to the treasurer by the principal.

10. It shall be the duty of the county high school treasurer to see that the county high school property is properly insured at all times. The building and equipment should be insured for their FULL VALUE and the premiums to cover the insurance should be paid in the regular way on the monthly pay roll out of any county high school funds in the treasury. All insurance policies must be made payable to the high school commission, and the treasurer shall be the custodian of the policies.

COURSES OF STUDY FOR THE COUNTY HIGH SCHOOLS OF ALABAMA

(Based on elementary course of seven grades or years.)

(For schools with three teachers.)

FIRST YEAR	COURSE A	Hours per Week
English	Grammar	5
	Composition	
	Classics	
	Spelling	
Mathematics	Arithmetic—First Semester (5)	5
	Algebra—Second Semester (5)	
Science	Agriculture—First Semester (5)	5
	General Science—2nd Semester (5)	
History	General History	3
Drawing	Geometrical and Linear Drawing	2
Vocational	Manual Training (Boys) (2)	2
	Cooking (Girls) (2)	
	Home and School Gardening	
	Total	22

SECOND YEAR		
English	Composition and Rhetoric	5
	Classics	
	Spelling	
Mathematics	Algebra	5
Science	Horticulture—First Semester (5)	5
	Botany—Second Semester (5)	
History	English History	3
Vocational	Domestic Science (Girls) (2)	2
	Woodworking (Boys) (2)	
	Vocational Accounts	2
	School Gardening	
	Total	22

THIRD YEAR		
English	Composition	5
	Classics	
	History of American Literature	
	Spelling	
Mathematics	Plane Geometry	5

	COURSE A—Continued	Hours per Week
Science	Physics	5
	Zoology—First Semester (3)	3
	Agriculture—Second Semester (3)	
	One of the following:	
	Animal Husbandry	
	Dairying	
	Poultry	
	Field Crops	
Home and Community	Sanitation	2
Vocational	Farm Mechanics (Boys) (2)	2
	Domestic Art (Girls) (2)	
	School Gardening	
	Total	22

FOURTH YEAR		
English	Composition	5
	Classics	
	History of English Literature	
	Spelling	
Mathematics	Solid Geometry—First Semester (5)	5
	Algebra—Second Semester (5)	
Science	Chemistry	5
History	American History and Civics	5
Elementary Economics		3
Vocational	School Gardening	
	Total	23

(For schools with three teachers.)

FIRST YEAR	COURSE B	Hours per Week
English	Grammar	5
	Composition	
	Classics	
	Spelling	
Mathematics	Arithmetic—First Semester (5)	5
	Algebra—Second Semester (5)	
Science	Agriculture (First Semester) (5)	5
Latin	Beginner's Latin—Second Semester (5)	
History	General History	3
Drawing	Geometrical and Linear Drawing	2

	COURSE B—Continued	Hours per Week
Vocational	Manual Training (Boys) (2)	2
	Cooking (Girls) (2)	
	Home and School Gardening	
	Total	22

SECOND YEAR

English	Composition and Rhetoric	5
	Classics	
	Spelling	
Mathematics	Algebra	5
History	English History	3
Latin	Beginner's Latin (Completed)	5
Vocational	Domestic Science (Girls) (2)	2
	Woodworking (Boys) (2)	
	Vocational Accounts	2
	School Gardening	
	Total	22

THIRD YEAR

English	Composition	5
	Classics	
	History of American Literature	
	Spelling	
Mathematics	Plane Geometry	5
Science	Physics	5
Latin	Caesar, Books I-IV, Prose Composition	5
Home and Community	Sanitation	2
Vocational	Farm Mechanics (Boys) (2)	2
	Domestic Art (Girls) (2)	
	School Gardening	
	Total	24

FOURTH YEAR

English	Composition	5
	Classics	
	History of English Literature	
	Spelling	
Mathematics	Solid Geometry—First Semester (5)	5
	Algebra—Second Semester (5)	
Science	Chemistry	5
History	American History and Civics	5
Latin	Cicero, Six Orations, Prose Composition	5
Vocational	Home and School Gardening (Optional)	
	Total	25

(Schools with four or more teachers may offer Courses A, B, and C.)

FIRST YEAR	COURSE C	Hours per Week
English	Grammar	5
	Composition	
	Classics	
	Spelling	
Mathematics	Arithmetic—First Semester (5)	5
	Algebra—Second Semester (5)	
Science	Agriculture—First Semester (5)	5
Latin	Beginner's Latin—Second Semester (5)	
History	General History	3
Drawing	Geometrical and Linear Drawing	2
Vocational	Manual Training (Boys) (2)	2
	Cooking (Girls) (2)	
	Home and School Gardening	
	Total	22

SECOND YEAR		
English	Composition and Rhetoric	5
	Classics	
	Spelling	
Mathematics	Algebra	5
History	English History	3
Latin	Beginner's Latin (Completed)	5
Vocational	Domestic Science (Girls) (2)	2
	Woodworking (Boys) (2)	
	Vocational Accounts	2
	Home and School Gardening	
	Total	22

THIRD YEAR		
English	Composition	5
	Classics	
	History of American Literature	
	Spelling	
Mathematics	Plane Geometry	5
Modern Languages	German or French	5
Latin	Caesar, Books I-IV, Prose Composition	5
Home and Community	Sanitation	2
Vocational	Farm Mechanics (Boys) (2)	2
	Domestic Art (Girls) (2)	
	School Gardening	
	Total	24

FOURTH YEAR	COURSE C—Continued	Hours per Week
English	Composition	5
	Classics	
	History of English Literature	
	Spelling	
Mathematics	Solid Geometry—First Semester (5)	5
	Algebra—Second Semester (5)	
Modern Languages	German or French	5
History	American History and Civics	5
Latin	Cicero, Six Orations, Prose Composition	5
Vocational	School Gardening	
	Total	25

Note: No school shall offer more than two foreign languages, one of which must be Latin.

Note: At the discretion of the principal, fourth year mathematics is elective in Course C for girls pursuing courses in music, expression, or art.

ADOPTED TEXTS FOR THE COUNTY HIGH SCHOOLS OF ALABAMA

(For schools with three teachers.)

COURSE A.

FIRST YEAR	AUTHOR	PUBLISHER	Price.	Exch. Pr.
English:				
High School Grammar	Sanford & Brown	D. C. Heath & Co.	$ 0.63	$ 0.21
Exercises in Form and Diction	Fansler & Fansler	Row, Peterson & Co.	.48	.....
Eighth Grade Reader	Elson	Scott, Foresman & Co.	.52	.26
High School Word Book, Brief Course	Sandwick & Bacon	D. C. Heath & Co.	.22	.11

*It should be noted that no adoption of dictionaries has been made for county high schools. It is presumed that the pupil will use the dictionary purchased while in the upper grades of the elementary school. In case the pupil does not have a dictionary he should purchase one, availing himself of the contract price for the elemntary public schools, as follows:

Webster's Secondary Dictionary (Plain), American Book Co. $1.35
Webster's Secondary Dictionary (Indexed), American Book Co. 1.62

Mathematics:				
Arithmetic, Book 3	Philips & Anderson	Silver, Burdett & Co.	.42	.21
Elementary Algebra	Marsh	Chas. Scribner's Sons	.55	.27
Science:				
General Science	Clark	American Book Co.	.72	.36
Agriculture:				
Elementary Principles of Agriculture	Ferguson & Lewis	Ferguson Pub. Co.	.60	30

	AUTHOR	PUBLISHER	Price.	Exch. Pr.
History:				
Outlines of General History	Renouf	The Macmillan Co.	1.20	.60
Drawing:				
Education and Industrial Drawing, Mechanical Series, Books 1-6	Thompson	D. C. Heath & Co.	†.15	
Mechanical Manual (for teachers only) one copy free to each high school			.70	
Manual Training:				
Manual Training Series	Fullan	Ala. Pol. Inst.	‡	
Cooking:				
Household Science and Arts	Morris	American Book Co.	.54	.27
SECOND YEAR				
English:				
Composition and Rhetoric	Clippinger	Silver, Burdett & Co.	.85	42
Classics	Silver Series	Silver, Burdett & Co.	§	
Exercises in Form and Diction	Fansler & Fansler	Row, Peterson & Co.	.48	
High School Word Book, Brief Course	Sandwick & Bacon	D. C. Heath & Co.	.22	.11
Mathematics:				
Elementary Algebra	Marsh	Chas. Scribner's Sons	.55	.27
Horticulture:				
Popular Fruit Growing	Green	Webb Pub. Co.	.75	.60
Botany:				
Practical Course in Botany, with Flora	Andrews	American Book Co.	1.35	.66

History:				
A Short History of England	Coman & Kendall	The Macmillan Co.	.90	.45
Bookkeeping:				
Principles of Bookkeeping and Farm Accounts	Bexell & Nichols	American Book Co.	.59	.29
Blanks for same	Bexell & Nichols	American Book Co.	.41	
Manual Training:				
Manual Training Series	Fullan	Ala. Pol. Inst.	‡	
Sewing:				
Household Science and Arts	Morris	American Book Co.	.54	.27
THIRD YEAR				
English:				
History of American Literature	Halleck	American Book Co.	1.13	.56
Handbook of English Composition	Woolley	D. C. Heath & Co.	.63	.31
Classics	Silver Series	Silver, Burdett & Co.	§	
Mathematics:				
New Plane and Solid Geometry	Wells	D. C. Heath & Co.	1.15	.57
Physics:				
Physics Complete	Mann & Twiss	Scott, Foresman & Co.	1.08	.54
Manual of Laboratory Physics	Alter	Dinsmore Alter	.45	
Zoology:				
Practical Zoology	Ritchie	American Book Co.	.90	.45
Sanitation:				
Sanitation and Physiology	Davidson	World Book Co.	1.12	.72
Agriculture (elect one):				
Animal Husbandry	Harper	The Macmillan Co.	1.23	.84

	AUTHOR	PUBLISHER	Price.	Exch. Pr.
Milk and Its Products	Wing	The Macmillan Co.	1.35	.67
Farm Poultry	Watson	The Macmillan Co.	1.35	.67
Southern Field Crops	Duggar	The Macmillan Co.	1.54	1.05
Manual Training:				
Manual Training Series	Fullan	Ala. Pol. Inst.	‡	
Cooking:				
Household Science and Arts	Morris	American Book Co.	.54	.27
FOURTH YEAR				
English:				
New English Literature	Halleck	American Book Co.	1.17	.58
Classics	Silver Series	Silver, Burdett & Co.	§	
Mathematics:				
New Plane and Solid Geometry	Wells	D. C. Heath & Co.	1.15	.57
Elementary Algebra	Marsh	Chas. Scribner's Sons	.55	.27
History:				
American History	James & Sanford	Chas. Scribner's Sons	1.33	.70
Civics:				
Government in the State and Nation	James & Sanford	Chas. Scribner's Sons	.84	.42
Chemistry:				
General Chemistry, Complete with Manual	Newell	D. C. Heath & Co.	1.12	.56
Economics:				
Elementary Economics	Burch & Nearing	The Macmillan Co.	.90	.45

NOTE: Rutland's Alabama School and College Theme Tablet, 40 sheets to the tablet, is recommended for use in the county high schools—(Hirshberg Co., Atlanta, Ga.) Price $0.08

†15c per copy. ‡No cost. §See page 35.

ADOPTED TEXTS FOR THE COUNTY HIGH SCHOOLS OF ALABAMA

(For schools with three teachers.)

COURSE B.

FIRST YEAR	AUTHOR	PUBLISHER	Price.	Exch. Pr.
English:				
High School Grammar	Sanford & Brown	D. C. Heath & Co.	$ 0.63	$ 0.31
Exercises in Form and Diction	Fansler & Fansler	Row, Peterson & Co.	.48	
Eighth Grade Reader	Elson	Scott, Foresman & Co.	.52	.26
High School Word Book, Brief Course	Sandwick & Bacon	D. C. Heath & Co.	.22	.11
Mathematics:				
Arithmetic, Book 3	Philips & Anderson	Silver, Burdett & Co.	.42	.21
Elementary Algebra	Marsh	Chas. Scribner's Sons	.55	27
Latin:				
Essentials of Latin for Beginners, Revised	Pearson	American Book Co.	.81	.40
Agriculture:				
Elementary Principles of Agriculture	Ferguson & Lewis	Ferguson Pub. Co.	.60	.30
History:				
Outlines of General History	Renouf	The Macmillan Co.	1.20	.60
Drawing:				
Education and Industrial Drawing, Mechanical Series, Books 1-6	Thompson	D. C. Heath & Co.	†.15	
Manual (for teachers only) one copy to each high school, free			.70	

	AUTHOR	PUBLISHER	Price.	Exch. Pr.
Manual Training:				
Manual Training Series	Fullan	Ala. Pol. Inst.	‡	
Cooking:				
Household Science and Arts	Morris	American Book Co.	.54	.27
SECOND YEAR				
English:				
Composition and Rhetoric	Clippinger	Silver, Burdett & Co.	.85	.42
Exercises in Form and Diction	Fansler & Fansler	Row, Peterson & Co.	.48	
Classics	Silver Series	Silver, Burdett & Co.	§	
High School Word Book, Brief Course	Sandwick & Bacon	D. C. Heath & Co.	.22	.11
Mathematics:				
Elementary Algebra	Marsh	Chas. Scribner's Sons	.55	.27
Latin:				
Essentials of Latin for Beginners, Revised	Pearson	American Book Co.	.81	.40
History:				
Short History of England	Coman & Kendall	The Macmillan Co.	.90	.45
Bookkeeping:				
Principles of Bookkeeping and Farm Accounts	Bexell & Nichols	American Book Co.	.59	.29
Blanks for same	Bexell & Nichols	American Book Co.	.41	

Manual Training:				
Manual Training Series	Fullan	Ala. Pol. Inst.	‡	
Sewing:				
Household Science and Arts	Morris	American Book Co.	.54	.36
THIRD YEAR				
English:				
History of American Literature	Halleck	American Book Co.	1.13	.56
Hand Book of English Composition	Woolley	D. C. Heath & Co.	.63	.31
Classics	Silver Series	Silver, Burdett & Co.	§	
Mathematics:				
New Plane and Solid Geometry	Wells	D. C. Heath & Co.	1.15	.57
Physics:				
Physics, Complete	Mann & Twiss	Scott, Foresman & Co.	1.08	.54
Manual of Laboratory Physics	Alter	Dinsmore Alter	.45	
Latin:				
Caesar	Walker	Scott, Foresman & Co.	1.08	.54
Sanitation:				
Sanitation and Physiology	Ritchie	World Book Co.	1.12	.72
Manual Training:				
Manual Training Series	Fullan	Ala. Pol. Inst.	‡	
Cooking:				
Household Science and Arts	Morris	American Book Co.	.54	.36

†15c per copy. ‡No cost. §See page 35.

	AUTHOR	PUBLISHER	Price.	Exch. Pr.
FOURTH YEAR				
English:				
New English Literature	Halleck	American Book Co.	1.17	.58
Classics	Silver Series	Silver, Burdett & Co.	§	
Mathematics:				
New Plane and Solid Geometry	Wells	D. C. Heath & Co.	1.15	.57
Elementary Algebra	Marsh	Chas. Scribner's Sons	.55	27
History:				
American History	James & Sanford	Chas. Scribner's Sons	1.33	.70
Civics:				
Government in the State and Nation	James & Sanford	Chas. Scribner's Sons	.84	.42
Chemistry:				
General Chemistry, Complete with Manual	Newell	D. C. Heath & Co.	1.12	.56
Latin:				
Cicero	Gunnison & Harley	Silver, Burdett & Co.	1.17	.58

NOTE: Rutland's Alabama School and College Theme Tablet, 40 sheets to the tablet, is recommended for use in the county high schools (Hirshberg Co., Atlanta, Ga.) Price $0.08

ADOPTED TEXTS FOR THE COUNTY HIGH SCHOOLS OF ALABAMA

(Schools with four or more teachers may offer Courses A, B, and C.)

COURSE C.

FIRST YEAR	AUTHOR	PUBLISHER	Price.	Exch. Pr.
English:				
High School Grammar	Sanford & Brown	D. C. Heath & Co.	$ 0.63	$ 0.31
Exercise in Form and Diction	Fansler & Fansler	Row, Peterson & Co.	.48	
Eighth Grade Reader	Elson	Scott, Foresman & Co.	.52	.26
High School Word Book, Brief Course	Sandwick & Bacon	D. C. Heath & Co.	.22	.11
Mathematics:				
Arithmetic, Book 3	Philips & Anderson	Silver, Burdett & Co.	.42	.21
Elementary Algebra	Marsh	Chas. Scribner's Sons	.55	.27
Latin:				
Essentials of Latin for Beginners, Revised	Pearson	American Book Co.	.81	.40
Agriculture:				
Elementary Principles of Agriculture	Ferguson & Lewis	Ferguson Pub. Co.	.60	.30
History:				
Outlines of General History	Renouf	The Macmillan Co.	1.20	.60
Drawing:				
Education and Industrial Drawing, Mechanical Series, Books 1-6	Thompson	D. C. Heath & Co.	†.15	
Manual (for teachers only) one copy free to each high school			.70	

	AUTHOR	PUBLISHER	Price.	Exch. Pr.
Manual Training:				
Manual Training Series	Fullan	Ala. Pol. Inst.	‡	
Cooking:				
Household Science and Arts	Morris	American Book Co.	.54	.27
SECOND YEAR				
English:				
Composition and Rhetoric	Clippinger	Silver, Burdett & Co.	.85	.42
Exercises in Form and Diction	Fansler & Fansler	Row, Peterson & Co.	.48	
Classics	Silver Series	Silver, Burdett & Co.	§	
High School Word Book, Brief Course	Sandwick & Beaon	D. C. Heath & Co.	.22	.11
Mathematics:				
Elementary Algebra	Marsh	Chas. Scribner's Sons	.55	.27
Latin:				
Essentials of Latin for Beginners, Revised	Pearson	American Book Co.	.81	.40
History:				
Short History of England	Coman & Kendall	The Macmillan Co.	.90	45
Bookkeeping:				
Principles of Bookkeeping and Farm Accounts	Bexell & Nichols	American Book Co.	.59	.29
Blanks for same	Bexell & Nichols	American Book Co.	.41	

Manual Training:				
Manual Training Series	Fullan	Ala. Pol. Inst.	‡	
Sewing:				
Household Science and Arts	Morris	American Book Co.	.54	.27
THIRD YEAR				
English:				
History of American Literature	Halleck	American Book Co.	1.13	.56
Hand Book of English Composition	Woolley	D. C. Heath & Co.	.63	.31
Classics	Silver Series	Silver, Burdett & Co.	§	
Mathematics:				
New Plane and Solid Geometry	Wells	D. C. Heath & Co.	1.15	.57
Latin:				
Caesar	Walker	Scott, Foresman & Co.	1.08	.54
French:				
Shorter French Course	Fraser & Squair	D. C. Heath & Co.	1.10	.55
Une Semaine a Paris		American Book Co.	.45	.22
Sanitation:				
Sanitation and Physiology	Ritchie	World Book Co.	1.12	.72
Manual Training:				
Manual Training Series	Fullan	Ala. Pol. Inst.	‡	
Cooking:				
Household Science and Arts	Morris	American Book Co.	.54	.27
NOTE: When German is taken instead of French, substitute the following:				
German:				
Kern's German Stories Retold	Kern	American Book Co.	.27	.13
Foundations of German	Kayser & Monteser	American Book Co.	.72	.36

†15c per copy. ‡No cost. §See page 35.

	AUTHOR	PUBLISHER	Price.	Exch. Pr.
FOURTH YEAR				
English:				
New English Literature	Halleck	American Book Co.	1.17	.58
Classics	Silver Series	Silver, Burdett & Co.	§	
Mathematics:				
New Plane and Solid Geometry	Wells	D. C. Heath & Co.	1.15	.57
Elementary Algebra	Marsh	Chas. Scribner's Sons	.55	.27
History:				
American History	James & Sanford	Chas. Scribner's Sons	1.33	.70
Civics:				
Government in the State and Nation	James & Sanford	Chas. Scribner's Sons	.84	.42
Latin:				
Cicero	Gunnison & Harley	Silver, Burdett & Co.	1.17	.58
French:				
Douay's French Reader	Douay	Silver, Burdett & Co.	.90	.45
NOTE: When German is taken instead of French, substitute the following:				
German:				
Elementary Reader	Lutz	Silver, Burdett & Co.	.94	.47

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†15c per copy. ‡No cost. §See page 35.

THE SILVER, BURDETT & COMPANY'S SERIES OF CLASSICS, FROM WHICH SELECTIONS ARE TO BE MADE FOR THE INDIVIDUAL HIGH SCHOOLS, ARE AS FOLLOWS:

Addison—Sir Roger de Coverley Papers	$0.22
Arnold—Sohrab and Rustum	.22
Baldwin—The Book of Elegies	.44
Baldwin—Choice English Lyrics	.44
Baldwin—The Famous Allegories	.44
Baldwin—Six Centuries of English Poetry	.44
Burke—Speech on Conciliation with the American Colonies	.22
Burns—Selected Poems	.22
Carlyle—Essay on Burns	.22
Chesterfield—Letters	.22
Coleridge—Rhyme of the Ancient Mariner	.22
Cooper—The Last of the Mohicans	.39
DeQuincy—Revolt of the Tartars	.22
Dryden—Palamon and Arcite	.22
Eliot—Silas Marner	.26
Goldsmith—The Traveler, and the Deserted Village	.22
Goldsmith—The Vicar of Wakefield	.26
Irving—The Sketch Book	.39
Keats—The Eve of St. Agnes	.22
Kinard—Old English Ballads	.22
Lamb—Essays	.22
Macaulay—Essay on Addison	.22
Macaulay—Essay on Milton	.22
Macaulay—The Lays of Ancient Rome	.22
Milton—Paradise Lost, Books I and II	.22
Milton—Selected Minor Poems	.22
Poe's Selected Poems and Tales of Edgar Allen Poe	.26
Pope—Essay on Man, and Essay on Criticism	.22
Pope—Translations of Homer's Iliad	.22
Pope—The Rape of the Lock	.22
Ruskin—Sesame and Lilies	.22
Rutland's Old Testament Stories	.35
Scollard—Ballads of American Bravery	.35
Scott—Ivanhoe	.44
Scott—The Lady of the Lake	.26
Shakespeare—As You Like It	.22
Shakespeare—Hamlet	.26
Shakespeare—Julius Caesar	.22
Shakespeare—King Henry the Fifth	.26
Shakespeare—Macbeth (166 pages)	.22
Shakespeare—Macbeth (269 pages)	.28
Shakespeare—The Merchant of Venice	.22
Shakespeare—Midsummer Night's Dream	.22
Shakespeare—The Tempest	.22
Shakespeare—Twelfth Night	.22
Shelley—Adonais and Alastor	.22
Southey—Life of Nelson	.35
Tennyson—Holy Grail	.22
Tennyson—Idylls of the King	.26
Tennyson—In Memoriam	.26
Tennyson—The Princess	.22
Webster—First Bunker Hill Oration	.22
Wordsworth—Selected Poems	.22

ENGLISH

THE aim of a high school course in English is two-fold: first, to aid the student in acquiring the power to speak and write English well; and secondly, to cultivate in him a love and appreciation of good literature. To attain these ends, the course must include grammar, rhetoric and composition, and literature. Of the five periods devoted to the study of English each week, the following distribution is suggested.

First Year: Grammar, two periods; Composition, two periods; Literature (Classics), one period.

Second Year: Rhetoric and Composition, three periods; Literature (Classics), two periods.

Third Year: Composition, one period first semester, two periods second semester; History of American Literature, three periods during first semester only; Literature (Classics), one period during the first semester, three periods second semester.

Fourth Year: Composition, one period first semester, two periods second semester; History of English Literature, three periods during first semester only; Literature (Classics), one period first semester, three periods second semester.

Consecutive daily recitations should be held in each subject for which more than one period per week is specified.

GRAMMAR.—I. INTRODUCTORY SUGGESTIONS

Students who have completed the elementary grades are supposed to be fairly well grounded in the rudiments of English grammar. They should at least be able to analyze simple sentences and the less involved types of compound and complex sentences; to recognize the different parts of speech; to explain the more ordinary constructions; and to inflect with reasonable accuracy nouns, pronouns, and verbs.

In the first year of the high school, therefore, the aim should be, first, a systematic study of the principles of grammar, with analysis and parsing of somewhat more difficult sentences; and

secondly—what is of equal importance—the application of these principles to the work in composition and literature that accompanies the work in grammar. The study of technical and theoretical grammar is unquestionably of value in the training of the mind. Such mental discipline, however, may be, and often is, secured equally well by the study of foreign languages. We should, therefore, emphasize in our teaching of grammar the practical benefits derivable from its study. The uses of a knowledge of grammar—its indispensable aid in testing the accuracy and correctness of our own composition, oral and written, and in the interpretation of literature—should be constantly insisted upon. To this end, we should avoid placing undue stress on the analysis and parsing of the more intricate constructions. Don't let us forget that even to mature minds advanced technical grammar is a difficult subject. It is clearly unreasonable to expect that students who have just entered the high school shall have the trained intelligence necessary for the understanding of involved constructions and the analysis of unusual or idiomatic expressions. Drill them over and over again in the commoner constructions of grammar.

We should bear in mind, too, that our students have been grinding away at grammar for years before reaching the high school, and that, unless we can instil some life into the subject by our manner of presenting it, it is likely to prove but a dreary task. There is nothing more hopelessly mechanical and deadening than the ordinary routine method of teaching grammar. To insist on a student's telling us, for the hundredth time, that the word 'boy' is a common noun, third person, singular number, masculine gender, is hardly the best way to inspire enthusiasm for the subject. It is furthermore of no conceivable benefit to anybody of sufficient intelligence to be admitted to the high school.

Emphasize the essentials, then, and pass over rapidly, or omit altogether, details that are either too easy or too difficult for boys and girls just entering upon high school work. Make constant application, also, of the student's knowledge of grammar to the correction of his own individual faults in oral and written composition, and to the explanation of difficult passages in the literature he is required to read. By this means he may be brought to realize that a knowledge of the grammar

of his mother tongue is essential to the clear and correct expression of his own ideas, and to his proper understanding and appreciation of the ideas of others. He will then perhaps come to see that grammar is not merely a means of mental discipline, but a tool for him to work with, and a key that will open up to him hidden treasures of thought.

GRAMMAR.—II. SUGGESTIONS FOR TEACHING

In teaching grammar it is important from the very beginning of the course to win the confidence and interest of the pupils. To this end nothing is more important than giving the pupils at the outset a clear conception of the nature of the high school course in grammar. The pupils are usually of the opinion that they mastered *grammar* in the elementary grades, and they resent on the part of the instructor any effort to teach them a subject that they already know. The teacher should, therefore, explain to them that the study of grammar in the high school implies the study of a more advanced grammar, and is for pupils of more mature age than are the pupils of the elementary school. The foregoing *Introductory Suggestions* clearly set forth the standpoint from which high school grammar must be taught, and present the high school point of view.

The following specific suggestions should be of value to the teacher:

1. Never reproach a class because of the grammar that they have forgotten since leaving the elementary school, and never make compromising comments upon the character of the training that the pupils received before entering the high school. The teacher should make a study of the course in grammar of the elementary grades, and should seek no occasion to criticise the course before his pupils.

2. Be absolutely frank with the class when difficult questions arise. Children quickly detect evasions; and once they become suspicious, they lose confidence in their teacher. The public school teacher need not be a master of scientific grammar in order to teach well; but it is necessary for him to be familiar with common English idioms and to have at his command convenient references for study. The following books will be helpful: (1) "The Teaching of English Grammar," Barbour, Ginn and Co.; (2) Emerson's "History of the Eng-

lish Language," Macmillan; (3) "New English Grammar," Vols. 1 and 2, Sweet, Clarendon Press Series; (4) "History of English," Champney, Macmillan; (5) "English Grammar," Baskerville and Sewell, American Book Co.; (6) "Advanced English Grammar," Kittredge and Farley, Ginn and Co.

3. Before assigning the first lesson in Sanford and Brown's "English Grammar," the teacher should discuss the new terminology with the class. Read the authors' preface to the textbook before beginning the discussion. The teacher might talk to the class in this manner:

I am sure that this class will be glad to hear that they are to study a grammar in which the names and terms have been so selected that they may be used in any grammar, whether it be an elementary school grammar or a high school grammar, or a French, a German, a Latin, or a Greek grammar. Until recently each new grammar was written with new terms and new names so far as the author wished to use new terms and new names; but in the future in the new grammars the same terms and names will be used that you learn this year. You might call yourselves pioneers, because you are leading the way to something new and something better than has been known before. Of course, as pioneers, you will have to face some hardships, but none that you cannot overcome. For a while you will have to think very carefully to keep from calling the good old-fashioned possessive case by its old familiar name, for in the new grammars this is called the *genitive* case. There are many other names which have been changed. I shall talk with you about these new names from time to time when we are studying the textbook, and I shall tell you, whenever I can, why they are used instead of the old names that you learned before you came to the high school. In a few years, perhaps, these new names will be taught also in the elementary schools, because in your pioneer work you are setting a good example.

If the teacher sets the class to work upon the new textbook without some explanation of the new terminology, the pupils will very likely fall into the wrong mental attitude and regard the study as unduly burdensome and confusing. No teacher should undertake to give the necessary explanation without first studying the "Report of the Joint Committee on Gram-

matical Nomenclature." The report may be obtained by writing to the following address:

The Secretary of the National Educational Association, Detroit, Michigan.

4. The teacher should constantly ask himself, (1) "Is there any method of inductive approach to this lesson?" or (2) "What is the inductive problem in this recitation?" For example, in answer to these questions the teacher may conclude that an exhaustive study should prepare the way to lessons in the textbook on Relative Pronouns. Now, how should this study be conducted? In answer to the question, the following method is suggested:

Let us suppose that the pupils are asked to bring to the class sentences in which are used the words, *that, what, which, who, as,* and *but.* We may for convenience assume that among other sentences the following two sentences are brought to the class by the pupils:

(1) Water that is stagnant is poisonous.

(2) I ask that you tell the truth.

By class discussion the pupils under the leadership of the teacher discover that *that* in sentence one, first, connects *that is stagnant* to the rest of the sentence; second, it refers to the word *water;* third, it has the same person, number, and gender as the word *water;* fourth, it is the subject of the verb *is* in the clause which it connects.

In sentence two, the class discover by investigation and discussion that *that* does not refer to another word in the sentence; that it has no case relationship, or other close relation to other words in the sentence; that it merely introduces the clause *you tell the truth.*

Investigation should then be extended to other sentences in which *that* occurs. Perhaps a sentence will be discussed in which *that* is used adjectively as a demonstrative adjective, or substantively as a demonstrative pronoun.

The pupils should understand that they are to make individual groups of all sentences in which *that* is used in similar ways.

After this grouping has been done, more sentences are to be discussed, in which the words *who, which, what, as,* and *but* are successively examined with the purpose of discovering in each case the exact relation to other words in the sentence.

After this investigation new groups will be formed; but many of the sentences will contain words resembling in use the uses of *that* in the sentences already examined. The process of investigating and grouping is continued until the teacher is satisfied that the pupils can classify according to use the words that are being studied. The groups should be written on the blackboard.

At this stage, the teacher should direct the attention of the class to the group of sentences containing the words used only as relative pronouns. The class should then state its definition of a relative pronoun by generalizing the functions and properties of the relative pronouns used in this group of sentences.

After the class have completed their classifications of the words, *that, which, what, who, as,* and *but,* the teacher may assign in the textbook lessons on the relative pronoun. In conducting the recitation the teacher should require the class to depend upon reason rather than upon memory.

An exercise of this character must be conducted in a systematic manner, and must be sufficiently exhaustive to be convincing to the pupils. The teacher should endeavor to make clear to the children that a classification or a generalization must be both inclusive and exclusive. Every definition and every classification must stand this test. The teacher will be aided greatly in conducting exercises of this character, if he is guided by the principles underlying all sound exposition. These principles may be studied in any rhetoric, under the treatment of exposition. (References: Brooks and Hubbard's "Rhetoric and Composition;" Baldwin's "College Manual of Rhetoric and Composition;" Canby and Opdycke's "Elements of Composition.")

Note: De Garmo's "Principles of Secondary Education" gives complete exposition of the inductive method of teaching.

The teacher will find it both profitable and fascinating to turn the pages of the textbook in advance of the class and plan, whenever necessary, an inductive approach to important principles and definitions. Time will be required for these exercises: but bear in mind that the *time element* is of importance in the *teaching* of grammar.

5. The teacher's ingenuity will enable him to vary the method of induction, and combine the inductive with the deduc-

tive method. For example, the teacher may, while emphasizing function, call attention to common resemblances. In teaching the uses of the accusative case, distinct advantage is gained by making inductions, first, with regard to the direct object, and then requiring the pupils to discover the ways in which other uses of the accusative resemble or differ from the direct object. The uses of the nominative case may be treated in a similar manner.

6. It is important that exercises in grammar be not only analytic in nature but also synthetic. The pupils should be required to construct many sentences illustrating the principles studied. Exercises in analysis must be alternated with exercises in constructive grammar. Constructive exercises are frequently neglected for the reason that the pupils construct sentences very slowly in the class. In order to remedy this difficulty the teacher should require that many sentences be written at home and brought to the class for discussion.

7. Formal grammar makes almost no distinction between structure and meaning. It would seem to be proper to emphasize structure while the textbook in grammar is being studied, yet the pupils will ask many troublesome questions as to distinctions in form and meaning. For example, in discussing such a sentence as, *It seems that all desired peace,* the question will naturally arise as to whether *It seems* or *that all desired peace* is the principal clause. The pupils may be told that *It seems* constitutes the principal clause, but they know from the meaning of the sentence that *that all desired peace* constitutes the main thought that is expressed. The teacher may help the pupils in two ways:

First: Tell the pupils that there are distinctions of form and meaning. Illustrations may aid them in understanding. A chandelier compared with the hook that supports it, so far as beauty and immediate purposes of illumination are concerned, is far more important than the hook; yet from the viewpoint of the general scheme of the lighting outfit, from the structural viewpoint particularly, the hook may be regarded as the principal element in the contrivance.

Second: In sentences of the character used in the foregoing example, the principal clause may be conceived of as the whole sentence, since the subordinate clause is an essential element of the principal clause, being in this instance a substantive used as the predicate nominative.

During the second, third, and fourth years in the high school, the teacher should emphasize the study of grammar from the viewpoint of meaning. For example, let us consider the definition of a compound sentence as it is given in the textbook. The definition is, "A compound sentence is made up of two or more simple sentences." In the second, third, and fourth years of the course, this definition should be studied from the standpoint of unity of thought, and the pupils should be taught the relationship between structure and meaning. In the analysis of adverbial or adjectival clauses increasing attention should be given to the exact meaning of the modifying clauses. The pupils should strive to determine the exact nature of the adverbial idea, and to state its exact relation to the meaning of the idea or thought that is modified.

The conclusion, then, is that while the textbook is being studied emphasis should be placed largely upon structure, but that the pupils should be cautioned not to confuse structure with meaning, and that later the emphasis should be shifted from structure to meaning.

COMPOSITION.—I. INTRODUCTORY SUGGESTIONS

The teacher will receive valuable aid from the following suggestions on the teaching of composition:

(1) One must keep in mind that she has four years within which to teach composition. When pupils come with faulty spelling, faulty punctuation, with almost everything faulty, the teacher is likely to become excited and try to correct too many things at once. It is best that she select the most crying need and work upon that steadily for a month until improvement is under fair way, then proceed to the next urgent need, and so on.—(Claudia Crumpton, in the Proceedings of the Alabama Educational Association, 1914.)

(2) Encourage all the teachers in the other departments of the school to demand good written and spoken English from their pupils.—(Chas. Swain Thomas, in the English Journal.)

(3) Criticise constructively and sympathetically as much by personal conference as possible.—(Chas. Swain Thomas, in the English Journal.)

(4) Select some suitable subject for a theme and spend the recitation period in having the class work out together the

selection and order of the topics.—(Chas. Swain Thomas, in the English Journal.)

(5) Pupils need to be taught how to criticise their own work systematically, and then how to criticise the work of others. Small results are to be obtained without telling the pupils just what to look for, what they will probably find, and what criticism they ought to make.—(Sherwin Cody.)

(6) The teacher should point out the errors in spelling, in grammar, in simple rhetoric. Then as a means of securing broad ideas in structure, the pupil should be taught to ask himself three important questions. Of the whole composition, of each paragraph, of each sentence, he should ask: (1) Is it unified? (2) Is it coherent? (3) Is the emphasis proper?" (Chas. Swain Thomas, in the English Journal.)

(7) The following extracts from "A Composition on Red Ink," by Alfred W. Hitchcock, English Journal:

Choose sensible subjects. Make as careful study of boys and girls as you have of Shakespeare and Milton.

Make your tasks definite.

Anticipate errors. Drill, drill, drill, orally when possible; go over the common errors time and again. Use blackboard freely to point out mistakes in spelling and punctuation and diction and construction. Anticipate, head off! Otherwise, what a lot of red ink it does take!

(8) Oral composition and class correction are good means of improving written composition, but the time will never come when the careful correction of papers is unnecessary. However, effective and economical methods will do a great deal to reduce the number of errors and so make the correction of composition easier.—(Mrs. Henry Hulst, in the English Journal.)

STATEMENT OF AIMS

The following statement of aims is quoted from the preliminary report of a committee recently appointed by the National Council of Teachers of English, for the reorganization of English in the secondary schools:

(1) *Expression in speech* includes:

(a) Ability to answer clearly, briefly, and exactly a question on which one has the necessary information.

(b) Ability to collect and organize material for oral discourse on subjects of common interest.

(c) Ability to present with dignity and effectiveness to a class, club, or other group material already organized.

(d) Ability to join in an informal discussion, contributing one's share of information or opinion, without wandering from the point and without discourtesy to others.

(e) For those who have or hope to develop qualities of leadership, ability, after suitable preparation and practice, to address an audience or conduct a public meeting, with proper dignity and formality, but without stiffness or embarrassment.

(f) Ability to read aloud in such a way as to convey to the hearers the writer's thought and spirit and to interest them in the matter presented.

Note: All expression in speech demands distinct and natural articulation; correct pronunciation; the exercise of a sense for correct and idiomatic speech; and the use of an agreeable and well managed voice. The speaker should be animated by a sincere desire to stir up some interest, idea, or feeling in his hearers.

(2) *Expression in writing* includes:

(a) Ability to write a courteous letter according to the forms in general use, and of the degree of formality or informality appropriate to the occasion.

(b) Ability to compose on the first draft a clear and readable paragraph or series of paragraphs on familiar subject-matter, with due observance of unity and order and with some specific detail.

(c) Ability to analyze and present in outline form the gist of a lecture or piece of literature, and to write an expansion of such an outline.

(d) Ability, with due time for study and preparation, to plan and work out a clear, well-ordered, and interesting report of some length upon one's special interests, literary, scientific, commercial, or what not.

(e) For those who have literary tastes or ambitions, ability to write a short story, or bit of imaginative composition, with some vigor and personality of style and in proper form to be submitted for publication, and to arrange suitable stories in form for dramatic presentation.

Note: All expression in writing demands correctness as to formal details, namely, a legible and firm handwriting, correct spelling, correctness in grammar and idiom, and observance of the ordinary rules for capitals and marks of punctuation. The writer should make an effort to gain an enlarged vocabulary, a concise and vigorous style, and firmness and flexibility in constructing sentences and paragraphs.

COMPOSITION.—II. SUGGESTIONS FOR TEACHING

(Much Material in the Outline has been drawn from reports of the National Council of Teachers of English.)

FIRST YEAR, FIRST SEMESTER
(Two Periods Weekly)

I. *Text,* Fansler and Fansler's "Exercises in English Form and Diction."

(a) *Principles* for study: 1, 2, 4, 5, 6, 7, 11, 13, 16, 17, 20, 21, 22, 23, 24, 25, 26, 30, 34, 39, 42, 44, 48, 55, 57, 58, 59, 62, 63, 73, 74-81, 86, 87, 89, 92, 102, 103, 110.

(b) *Suggestions*: Before attempting to teach the book, the teacher must master the preface to the "Exercises in English Form and Diction." While the study of the "Exercises" is in progress, practical application of the principles should be made in the correction of themes. The study of the "Exercises" must be conducted in an absolutely systematic manner.

II. *Emphasis* is placed upon (1) free expression of thought in both written and oral composition, (2) a mastery of the mechanical features of the theme.

III. *Oral Expression*: The pupils are given frequent practice in reading aloud. Selections from Elson's Reader are to be memorized and recited before the class. Attention is given to position, breathing, and the correct use of the voice in reading and speaking. Pupils visit places of interest in the community, make detailed observations, and report these observations to the class. (The teacher should read the references given in the accompanying bibliography.)

IV. (1) *Written Composition*: Original themes, and exercises in Fansler's "English Form and Diction."

Special stress is placed upon the construction of sentences illustrating the principles studied in the "Exercises in English

Form and Diction." Practical application of the principles is persistently made in theme revision.

(2) *General Directions*: Themes are written weekly. All themes are criticised by the teacher and returned to the pupils for revision. The general directions given on pages 360-363 of Clippinger's "Composition and Rhetoric" are to be applied in the preparation and criticism of all themes. Special attention is directed to the marks of correction given on pages 361-362. Written examinations are regarded as important exercises in writing.

(3) *Outlines*: The teacher must not assume that the pupils can plan and outline themes without special training. A standard form must be chosen for theme outlines. The discussion of the outline given on pages 69-74, Clippinger's "Composition and Rhetoric," may be adapted to the needs of the course. No theme should be accepted that is not accompanied by an outline.

(4) *Spelling*: Careless spelling must not be tolerated. Five misspelled words are excessive in a theme by a pupil of the first year. Make list of words commonly misspelled and drill the pupils on these lists.

(5) *The Dictionary*: The pupils require repeated instruction on the use of the dictionary and special practice on the pronunciation of words diacritically marked.

(6) *Personal Conferences*: Individual conferences are indispensable to effective training in composition. Appointments should be met punctiliously by both teacher and pupils.

(7) *Letter Writing*: There is no form of writing more important than the letter. The pupils should be required to master the mechanics of form in the beginning of the course. The teacher will avoid confusion by basing the entire course on the directions for letter-writing given on pages 148-166, Clippinger's "Composition and Rhetoric." The ingenious teacher will always supply motives for the composition of letters.

(8) Material for Compositions: Material for both oral and written compositions should be drawn from the following sources:

(a) The experiences and observations of the pupils in both school and home life.

(b) The literature read in school.

(c) The subjects studied in other departments of school, especially in agriculture, general science, manual training, cooking, and home and school gardening.

Observation: Emphasize training in observation. The pupils will find "Sharp Eyes" in "Locusts and Wild Honey," John Burroughs, both stimulating and interesting. The following extract from "The Teacher and the School," Colgrove, is suggestive:

"The materials at the teacher's command for training pupils in observation are abundant and varied. They include all the natural environment of the school, the soil, rocks, and strata; the changing seasons, clouds, winds, fogs, rain, and snow; the varying appearance and position of the sun, the moon, planets, and stars; the trees and plants, their kinds, growth, flowers, fruits, and various uses; animals, as to their size, habits, form, color, instincts, movements, food, enemies, and uses. And in addition to all these there are the materials that may be drawn from the pupil's social environment, the persons whom he meets, their occupations, interests, classes, dress, customs, institutions."

FIRST YEAR, SECOND SEMESTER
(Two Periods Weekly)

I. *Text*, Fansler and Fansler's "Exercises in English Form and Diction."

(a) *Principles for study*: 10, 12, 14, 15, 24, 27, 28, 31, 33, 35, 36, 38, 41, 43, 45, 46, 49, 51, 52, 61, 64, 68, 82, 84, 88, 89, 90, 91, 94, 95, 96, 97, 98, 100, 101, 104, 105, 106, 109, 111, 112, 113, 114, 115.

(b) *Suggestions*: Read the suggestions given for the first semester. Review of the principles studied during the first semester is necessary.

II. *The course* for this semester includes (1) elementary treatment of the principles of composition, unity, proportion, proper arrangement, and coherence, (2) training for naturalness in writing and speaking, (3) training in the accurate choice and effective use of words, (4) exercises in paragraph writing.

III. *Oral Expression*: Emphasize sincerity and animation in speech, and intelligent grouping in reading aloud. All ex-

ercises are conducted before the class as an audience. Special instruction is given upon the preparation of formal and informal talks. (The teacher will find helpful suggestions in Ward's "Oral Composition," Macmillan.) The pupils narrate both real and imaginary experiences and describe both real and imaginary scenes. Criticisms are made upon position, pronunciation, and articulation. The exercises in oral expression are correlated with the exercises in writing. Practice is continued in reading aloud. Recitations are conducted with a view to training the pupils in habits of correct and accurate speech. The pupils are trained to formulate their thoughts and to speak with deliberation. Complete answers are required to questions.

IV. (1) *Written Composition*: Weekly themes are required; all themes are criticised and returned to the pupils for revision. The needs of individual students are analyzed, and so far as is necessary these needs are attended to in individual conferences. The course is conducted as in the first semester. Themes may be written describing or interpreting pictures, cartoons, or works of art. (A list of books on this phase of composition teaching is included in the accompanying bibliography.) Many of the themes may be in the nature of simple explanations of familiar processes, or of the principles upon which favorite games are played. Occasionally, themes should be written upon subjects related to the pupil's study of botany, general history, domestic science, woodworking, vocational accounts, and school gardening. Training in observation is continued as in the first semester.

(2) *Letter Writing*: The pupils are thoroughly drilled in the mechanics of good form. Motives of a social or of a business nature are sought in making assignments for letter writing. Letters should be required frequently with insistence upon absolute correctness in mechanical features.

SECOND YEAR, FIRST SEMESTER
(Three Periods Weekly)

I. *Texts*, (1) Clippinger's "Composition and Rhetoric."

Chapters for study: I, Forms of Discourse; II, Descriptive Writing; III, Narrative Writing; VI, Letter Writing; VII, Oral Composition; VIII, The Fable; XI, News Writing; XIII, Poetry.

(2) Fansler and Fansler's "Exercises in English Form and Diction."

(a) *Principles for study*: 3, 8, 9, 18, 19, 29, 32, 37, 39, 40, 50, 53, 54, 56, 60, 65, 66, 67, 69, 70, 71, 72, 83, 85, 99, 107, 108, 116-130.

(b) *The study* of the "Exercises in English Form and Diction" is continued as in the previous year.

II. *The pupil* is expected to form habits of sincere, accurate self-expression. Chief attention is given to a study of narration and description.

III. *Suggestions*: Keep in mind that the capabilities of the pupils vary widely. The pupil who fails in short story writing may yet acquire ability in expository writing, if his teacher is sufficiently discerning to shift the emphasis of training in the right direction. Study each pupil and adapt his training to his individual needs.

Creditable or meritorious writing should be freely commended. Themes might be displayed occasionally on a bulletin board. The most interesting themes written during the month might be bound into a volume and placed in an accessible place for the inspection of the pupils. Themes should be offered to local newspapers for publication.

IV. *Oral Expression*: The pupil is given continuous opportunity to acquire facility in vocal and physical expression. Class exercises include: (1) reports upon current events, interesting incidents from novels, stories, plays, or poems; (2) vocal reading of themes for purposes of criticism; (3) the analysis of plots of favorite stories; (4) narration of anecdotes based upon incidents in the lives of the pupils; (5) a study and reproduction of conversation overheard by the pupils; (6) description of persons whose personalities are interesting, par ticularly persons well known in the school community.

V. (1) *Written Composition*: Formal themes accompanied by outlines are required at least weekly. The exercises include: (a) written reports of conversation overheard by the pupils; (b) imaginary conversation between characters familiar to the pupils through the study of literature; (c) dramatization of passages from literature; (d) descriptions relating to the study of manual arts, cooking, agriculture; (e) a composite theme on a class newspaper; (f) short story writing; (g) the writing of summaries of short stories and novels.

(2) *Spelling*: Insist upon correct spelling in all written work. Give drills upon words commonly misspelled. Four misspelled words in one theme are excessive.

(3) Letter *Writing*: Exercises are preceded by a review of the chapter on letter writing. Letter writing for the semester might be closely correlated with the study of rhetoric by requiring (a) friendly narrative letters retelling events or incidents of vacations or holidays, (b) descriptive letters, (c) letters purporting to be written by characters in books. There should be considerable variety in the character of letters written during this semester.

(4) *Caution*: Considerable difficulty will be experienced in striving for literary effects in descriptive writing. The term "emotional tone," which is freely used in the textbook requires careful explanation by the teacher. Encourage the pupils to describe real objects, or scenes; e. g., a harvest scene at midday, a shop bench during the laboratory period. Close analytical study must be made of the specimen themes and literary models presented in the textbook. The teacher must clearly understand that the study of the textbook during the second year constitutes the foundation work of the composition courses of the third and fourth years. The requirements set forth in the textbook cannot be fully met before the end of the fourth year.

SECOND YEAR, SECOND SEMESTER
(Three Periods Weekly)

I. *Text,* Clippinger's "Composition and Rhetoric."

Chapters for study: IV, Expository Writing; V, Argumentative Writing—The Essay—Forms of Public Address—Debating; VI, Letter Writing.

II. *Exposition and argument* are taught as the most useful of all forms of discourse. The oral point of view is emphasized.

III. *Oral Expression*: The class is organized for team debating, and for drills on parliamentary law. A practical study is made of the forms of public address, of debating, and of extemporaneous talks. Programs are conducted by the class upon literary subjects, and upon other subjects of interest to the school and community.

IV. (1) *Written Composition*: The distinction between fact writing and imaginative writing is emphasized. The outline and the brief are stressed. Particular attention is given to individual conferences.

(2) *Letter Writing*: (a) Letter writing constitutes an important feature of each semester's work. Letters are written with a view to making serviceable application of the principles studied in exposition and argumentation. Emphasis is placed largely upon business correspondence. Teacher's reference: (1) "How to Do Business by Letter," (2) "How to Write Letters that Pull," Sherwin Cody.

(b) Every teacher who is interested in the formulation of plans for a competition in interscholastic letter writing will write to the Editor of The Bulletin of the Alabama Association of Teachers of English. Address communications in the care of the Central High School, Birmingham, Alabama.

THIRD YEAR, FIRST SEMESTER
(One Period Weekly)

I. *Text*, Woolley's "Handbook of Composition."

It is suggested that assignments be discussed in the following order:

(1) Part III, "Analytical Outlines," (2) "Putting Discourse on Paper," (3) Appendix "A." All rules for spelling should be memorized. The assignments should be discussed systematically by both the teacher and the pupils.

II. The themes written during the semester are largely expository. Ends to be attained are: (1) skill in planning and outlining composition, (2) skill in gathering and organizing material, (3) advanced knowledge of the structure of the paragraph, (4) a clearer conception of the principles of unity, coherence, and emphasis.

III. How to Teach Woolley's "Handbook of Composition." It would not seem advisable to teach the "Handbook of Composition" as a textbook. Yet in teaching the pupils the use of the "Handbook" as a reference book, it is necessary to give them systematic instruction. High school pupils are usually bewildered by a book of rules; hence the aim of instruction in this instance should be to train the pupils how to consult the "Index," or the "Table of Contents" for desired information.

Special drills should be given in the use of the "'Synopsis of Numbered Rules.'" The "Handbook" should constitute the basis on which the instructor rests his criticisms in the correction of themes.

IV. *Oral Expression*: The training is continued as in the second year, with increasing emphasis upon clear enunciation and correct pronunciation.

V. (1) *Composition Exercises*: (a) Analytical outlines of classics studied during the semester; (b) critical essays upon subjects related to the study of literature and to the history of American literature; (c) expository themes upon subjects related to vocations, amusements, and experiences of interest to the pupils outside of school life; (d) expository themes upon subjects related to the pupils' study of zoology, agriculture, home and community sanitation, farm gardening, athletics. (e) Occasional assignments are made in descriptive, narrative, and argumentative writing. (f) Each theme assignment is preceded by appropriate review in Clippinger's "Composition and Rhetoric."

(2) *Letter Writing*: Letter writing is continued as in the second semester of the second year.

THIRD YEAR, SECOND SEMESTER
(Two Periods Weekly)

I. *Text*, Woolley's "Handbook of Composition."

The assignments for discussion should be selected from Parts I, IV, and V, and from the Appendix of the "Handbook." Review Parts II and III.

II. *Ends to be attained*: (1) Effectiveness in diction; (2) correctness and variety in sentence structure; (3) effective organization of the whole composition.

III. *Oral Expression*: The training as in the previous semesters is continued. Greater skill and efficiency are expected.

IV. (1) *Written Composition*: Theme assignments are preceded by review in Clippinger's "Composition and Rhetoric." Paragraph themes or long themes are written weekly. All themes must be accompanied by outlines. The material for composition is chosen as in the first semester. Themes are criticised by the teacher and returned to the pupils for revision.

(2) *Letter Writing*: The teacher should make arrangements for an exchange of letters between her class and a class in another high school.

FOURTH YEAR, FIRST SEMESTER
(One Period Weekly)

I. *Reference Books,* Woolley's "Handbook of Composition, and Clippinger's Composition and Rhetoric.

II. *Ends to be attained*: (1) Habits of intelligent planning and revising, (2) spontaneity of expression.

III. *Exercises in Oral Expression*: (1) Correlation of oral composition with written composition by reproducing talks in the form of writing; (2) extemporaneous talks; (3) debates; (4) class conversation upon topics of special interest to the pupils; (5) formal speeches on special occasions: Temperance Day, Bird Day, Peace Day, Thanksgiving Day, Christmas, New Year's, birthdays of authors and celebrated men and women, e. g., Henry Timrod, S. A. Knapp, Helen Keller; (6) illustrated talks, if stereopticon lantern is accessible; (7) constant practice in reading themes aloud for purposes of criticism; (8) recitations and declamations; (9) dramatic presentation of scenes from plays of Shakespeare, or original class plays.

IV. (1) *Exercises in Composition*: Themes are written fortnightly, criticised by the instructor and returned to the pupils for revision. Theme assignments are preceded by review of Clippinger's "Composition and Rhetoric." Woolley's "Handbook of Composition" is required for reference. The theme writing for the semester is characterized by variety in both form and content. The teacher should make theme assignments with special reference to the natural capabilities and tastes of the pupils. The exercises should include expositions, descriptions, arguments, stories, poems, class plays, editorial writing, the writing of advertisements. The semester's work should be characterized by a strong expression of the individual. Theme subjects should be occasionally selected relating to the following studies: chemistry, American history and civics, rural economics, school gardening.

(2) *Letter Writing*: Interest is stimulated through a study of the letters of celebrated writers. Letters may be selected for

this purpose from Hawthorne, Longfellow, Helen Keller, Robert Louis Stevenson, Sidney Lanier, Tennyson, and Henry Timrod. The pupils learn that personal experiences have a peculiar charm when embodied in letters of friendship. Unconventionality in diction and form is not permitted.

(3) *Spelling*: No theme should be accepted in which more than two words are misspelled. Constant attention is given to the use of the dictionary.

FOURTH YEAR, SECOND SEMESTER
(Two Periods Weekly)

I. *Reference Books*: Clippinger's "Composition and Rhetoric," Woolley's "Handbook of Composition."

II. *Ends to be attained*: (1) Confidence and self-possession in speech; mastery of the mechanics of the brief; skill in argumentative writing.

III. *Exercises in Oral Expression*: The exercises in oral expression are correlated with the study of both literature and written composition. The course is conducted as in the first semester. Class reports are made upon subjects related to current literature, science, recent inventions, notable men and women of the day.

(1) *Written Composition*: Themes are written weekly. Neatness and accuracy are required in all written work. The exercises in composition include (a) extensive practice in brief making, and in writing argument, (b) a study of Burke's Speech on Conciliation as a model for argumentative writing, (c) practice in dramatization, journalism, short-story writing, writing of advertisements. Theme subjects are drawn from all forms of school and community activity, play, sports, work, and local commercial and industrial interests. Special practice is given in the preparation of digests and abstracts.

(2) *Letter Writing*: No letter should be accepted with mistakes in form. The teacher should supply real motives for letter writing. Competition in interscholastic letter writing affords fascinating possibilities.

Read current articles in the English Journal.

The teacher of composition must be an untiring student of the subject. The accompanying bibliography will to some extent meet the demands of the teacher. Especial attention is directed to the following:

(1) "The Teacher and The School," Colgrove. Chapter III, The Study of Children and Its Results; VI, The American Common School; VII, The Nature of the School; VIII, The Aims of the School; IX, The Work of the School; XV, The Nature of the Teaching Process; XVI, Some Laws of Teaching; XII, The Nature and Importance of Training; XIII, Habit Forming is Character.

(2) "How to Study," McMurry. Chapter V, The Organization of Ideas; VI, Judging of Worth of Statements; VIII, The Using of Ideas; X, Individuality.

BIBLIOGRAPHY

The Teacher and the School, Colgrove. Chas. Scribner's Sons.

How to Study, McMurry. Houghton Mifflin Co.

Principles of Secondary Education (Vols. I and II), De Garmo, Macmillan.

A Primer of Psychology, Titchener. Macmillan.

Mental Development, Baldwin. Macmillan.

The English Journal, University of Chicago Press.

The Teaching of English, Carpenter, Baker, and Scott. Longmans, Green & Co.

The Teaching of English, Chubb. Macmillan.

Teaching the Language Arts, Hinsdale. Appleton.

Self-Cultivation in English, Palmer. Houghton Mifflin Co.

The Play of Man, Groos. Appleton.

Social Organization, Cooley. Chas. Scribner's Sons.

Essays on Style, Rhetoric, and Language, DeQuincey. Allyn & Bacon.

The Forms of Prose Literature, Gardiner. Chas. Scribner's Sons.

The Art of Seeing Things (in Leaf and Tendril), John Burroughs.

The Voice and Spiritual Education, Corson. Macmillan.

Evolution of Expression (Vols. I and II), Emerson. Emerson College of Oratory, Boston.

The Province of Expression. Curry, Boston School of Expression, 458 Boylston St., Boston.

Principles of Vocal Expression and Literary Interpretation, Chamberlain. Scott, Foresman & Co.

How to Teach Reading in the Public Schools, Clark. Scott, Foresman & Co.

How to Speak in Public, Keiser. Funk & Wagnalls Co.

Practical Public Speaking, Clark and Blanchard. Chas. Scribner's Sons.

Effective Speaking, Phillips. The Newton Co., Chicago.

Oral Composition, Ward. Macmillan.

Oral English in Secondary Schools, Smith. Macmillan.

Dramatization, Simons and Orr. Scott, Foresman & Co.

Composition Planning, Opdycke. Appleton

A First Book of Composition, Briggs and McKinney. Ginn & Co.

Essentials of Exposition and Argument, Foster. Houghton Mifflin Co.

The Making of Arguments, Gardiner. Ginn & Co.

Manual of Debate, Thomas. American Book Co.

Theme Book in English Composition, Hitchcock. Henry Holt & Co.

The Study of the Paragraph, Thomas. American Book Co.

The Writing of News, Ross. Henry Holt & Co.

Writing the Short Story, Esenwein. Hinds, Noble, and Eldredge.

Emerson's History of the English Language.

Words and Their Ways in English Speech, Greenough and Kittredge. Macmillan.

High School Word Book, Sandwick and Bacon. D. C. Heath & Company.

12,000 Words Often Mispronounced. Phyfe. Putnam's Sons.

Dealers in Photographs and Prints:

(One Cent Each)

Perry Picture Company, 76 Fifth Avenue, New York.

The Helman Taylor Art Company, 257 Fifth Avenue, New York.

Alfred Hart, 219 West 109th Street, New York.

Soule Photograph Company, 338 Washington Street, Boston.

Books on Interpreting Pictures:

How to Enjoy Pictures, Emery. The Prang Educational Co., New York.

The Appreciation of the Picture, Sturgis. The Baker & Taylor Company, New York.

How to Interpret Pictures, Sward. The Round Table Booklet Publishers, Greenville, Pa.

The Meaning of Pictures, Van Dyke. Chas. Scribner's Sons, New York.

How to Look at Pictures, Witt. C. Bell & Son, London.

LITERATURE—I. COURSE OF STUDY

First Year

All the literature of this year is found in Elson's Eighth Grade Reader. A manual for teachers of this reader may be had free upon request to the publishers.

For Study: Short Stories by Irving, Hawthorne, and Poe; Longfellow's Evangeline and Whittier's Snow-Bound; Selections from Shakespeare's Plays; Patriotic Selections.

For Reading: The rest of the selections in the Elson Reader.

Second Year

For Study: Shakespeare's Julius Caesar; Scott's Ivanhoe, or Quentin Durward; Macaulay's Warren Hastings; Scott's Lady of the Lake.

For Reading: Mrs. Gaskell's Cranford, or Dickens's David Copperfield; Macaulay's Lays of Ancient Rome, or Coleridge's Ancient Mariner; Bunyan's Pilgrim's Progress (Part I), or Stevenson's Travels With a Donkey; The Odyssey, or Old Testament Stories.

Third Year

For Study: Shakespeare's Merchant of Venice; Hawthorne's House of the Seven Gables; Franklin's Autobiography, or Poe's Tales (selections); Lowell's Vision of Sir Launfal and selections from Bryant and Holmes.

For Reading: Shakespeare's Henry V, or a Midsummer Night's Dream; Stevenson's Treasure Island, or Dickens's A Tale of Two Cities; Irving's Sketch Book, or Addison's Sir Roger de Coverley Papers; Poe's Poems, or Gray's Elegy and Goldsmith's Deserted Village.

Fourth Year

For Study: Shakespeare's Macbeth; Milton's L'Allegro, Il Penseroso, and Comus: Burke's Speech on Conciliation, or

Washington's Farewell Address and Webster's Bunker Hill Oration; Macaulay's Life of Johnson, or Carlyle's Essay on Burns.

For Reading: Shakespeare's As You Like It, or Twelfth Night; Goldsmith's Vicar of Wakefield, or George Eliot's Silas Marner; Tennyson's Idylls (selections), or Browning's Select Poems; Parkman's Oregon Trail, or Lincoln's Addresses.

LITERATURE—II. SUGGESTIONS FOR TEACHING

The literature assigned for reading and study during the first year consists mainly of brief masterpieces of prose and poetry, chosen primarily for literary and dramatic qualities of the most obvious kind. In the hands of a competent teacher these selections cannot fail to make a strong appeal to the emotions and imaginations of young students. Excellent hints and suggestions for study are contained in the Elson text.

In the second, third, and fourth years the books to be used are, with few exceptions, those recommended by the National Conference on Uniform Entrance Requirements in English, and adopted by standard high schools throughout the country. While no claim is made for them of exclusive excellence, it is believed they will be found at least as well chosen as any other group of classics that might have been suggested. Furthermore, if taken up in the order indicated, they will prove to be reasonably well adapted to the maturity of the average boy or girl in the respective grades. A glance at the lists will reveal the fact that these classics are all specimens of the following literary types: (a) dramas, (b) novels or short stories, (c) essays, (d) poems, (e) translations. The selections are so arranged that the student will make the acquaintance of at least four of these types during each of the four high school years.

Since there are four classics required for special study during each of the last three years, the time available for each will be limited to an average of approximately two months, or eighteen recitation periods. The teacher is expected to use his discretion in determining which books demand intensive study, and which may be made to yield the desired results by a briefer and more general treatment. It is obvious, for exam-

ple, that the study of Shakespeare's Merchant of Venice calls for far more time and attention than Franklin's Autobiography.

The methods of teaching these classics will necessarily vary with the texts under consideration, and with the maturity and preparation of the students. One fact, however, which we teachers of English need to keep constantly before us is that the primary purpose of the high school course in literature is to inspire the student with a love for reading good books. Incidentally, other helpful results will be striven for. In the course of the four years the student will, it is hoped, acquire a somewhat intimate knowledge of a few of the masterpieces of our literature. At the same time he will also learn something of the history and development of this literature. But unless the high school graduate carries with him into college or into life a genuine love for reading, a taste for the best in literature, and a largely increased power to appreciate and enjoy it, his teacher of English has signally failed in what should be the supreme end and aim of all his efforts.

The responsibility for the success or failure of the work in English literature rests largely with the teacher,—more so, perhaps, than in any other course in the high school curriculum. If the teacher himself lacks the power of sympathetic appreciation for the best literature; or possessing this appreciation, if he lacks the gift of imparting it, it is only the exceptional student to whom the work in literature will not seem "a dull and endless strife." Yet even the gifted teacher may fail to secure the best results if he lets his enthusiasm for learning and scholarship blind him to the needs and limitations of his students. In the first two years especially there should be as little of the critical and analytical attitude toward literature as is consistent with serious work. Let the emphasis fall on the story, the characters, the moral purpose, and above all, if it is a poem that is the subject of study, on the beauty and the power of the poetry itself. Historical and classical allusions, the meaning of difficult words and obscure passages should not, of course, be altogether ignored. But let the student realize that, in the high school, at least, these things are of minor import and distinctly subordinate to the great end of intelligent and sympathetic appreciation of the masterpiece as a whole.

It will help immensely to secure this much to be desired result if the teacher is an effective reader. There is perhaps no other power so desirable,—one might almost say, so nearly indispensable—in a teacher of literature as this one of sympathetic and interpretative reading. Oral reading should by all means be required of high school pupils throughout the entire four years' course. But first of all, let the teacher himself, unless he is so fortunate as to have a natural gift for reading, practice the art unremittingly, in order that he may not be put to shame by the more talented of his pupils, and fail utterly to interpret the true spirit and essence of the literature he is attempting to teach.

The books for reading only will in most if not all cases have to be left for home reading. To test the student's knowledge and appreciation of these classics, it would be well to make them the basis of much of the required written work during each of the four years.

The requirement in the history of English and American literature during the last two years should be strictly subordinated to the classics that are being read and studied at the same time. This historical work is of importance in order that the student may be given a general survey of the whole field of literature, and may observe the progress and development of the great literary movements.

SPELLING

I. *The purposes in the study of High School Spelling are*:

1. To insure the habit of correct spelling.
2. To enlarge the pupil's vocabulary.
3. To help him in writing—in choice of words.
4. To enable him to speak forcefully and effectively.
5. To enable him to distinguish fine shades of meaning, thereby increasing his interpretative power.

II. *Plans that may be used in developing the subject*:

The first essential is to create and maintain an interest in Spelling as such; to see to it that in the school there is a "spelling conscience" kept sensitive.

Therefore, it goes without saying that no one method of recitation will prove constantly effective. There is great opportunity for variety. Below are suggested a few ways:

1. Oral spelling in which the entire school takes part. (There are students who learn more readily through the ear gate.) Old time spelling matches in which class is pitted against class, or parents against each other or against the school—sometimes neighborhoods or different schools contesting—are great developers of interest.

2. Written spelling which must be carefully safeguarded to be made effective. Be sure no incorrect form is left for the student's eye to fall upon.

3. Constant, habitual use of the dictionary, and in connection with definition, the correct, exact use of the word.

4. Phonetic spelling orally, and diacritical marks used in written spelling. Every student should be trained to spell by sound. Nothing is of greater service in working for clear enunciation. We would stress this point.

5. Have frequent rapid pronounciation drills.

6. Make every lesson a spelling lesson.

7. We consider when all is said and done that *"word analysis"* is the best method of studying Spelling in the high school. *Whatever purpose is to be subserved, it can best be realized here.* It carries with it its own guarantee.

III. *The textbook chosen admirably adapts itself to the purposes and plans suggested.*

"The Suggestions to the Teacher" are practical and timely.

The student from following the instruction to consult the dictionary regarding the unfamiliar words "gets the dictionary habit."

Part II is given up to word analysis and vocabulary building.

Part III definitely couples Spelling with the other branches of study, and furnishes material for pronunciation drills and for distinguishing fine shades of meaning.

Add to this the fact that Spelling is a definite assignment throughout the high school course, and we have every reason to expect that future high school graduates will be accurate spellers.

MATHEMATICS

IN TIMES past mathematics along with the ancient languages constituted the bulk of almost every course of study and required the greater part of the pupils' time and effort. Other subjects were deemed of minor importance and only these two were made the object of serious study. In most schools proficiency in mathematics was the standard by which the scholarship of a student was judged. In recent years, however, owing to the increasing demands of modern life upon the school, the curriculum has been greatly broadened by the addition of modern languages, English, history, the physical sciences, and industrial subjects; and because of this mathematics no longer dominates school work as it once did. It must now take rank along with other subjects and receive with them its proportionate share of the pupils' time.

The cutting down of the time formerly devoted to mathematics by the addition of new subjects absolutely essential in a well-rounded course of study, without lessening in any way the amount of mathematical knowledge which the well-trained high school pupil is expected to possess, makes it imperative that good teaching be done in order that the pupils may accomplish the required work in arithmetic, algebra, and geometry within the time specified in the high school course.

Too often results show that the ordinary methods of teaching mathematics in both the elementary and the high school are stupefying and deadly. The child begins the study of arithmetic and continues it for seven or eight years, and then is often unable to solve easy problems in fractions, interest, or the "rule of three." After completing algebra the high school pupil frequently can not solve the simplest quadratic equation "without looking at the book." And the geometry student generally learns the book-given demonstrations of the various propositions "by heart." The cure for these difficulties lies in better methods of teaching and in a clearer understanding on the part of teachers of the aim and function of each branch of mathematics.

The keynote of successful teaching of mathematics is interest,—genuine and abiding interest that leads to sustained effort by the pupil. To secure such interest it is necessary that the immediate environment and actual experience of the pupil be freely drawn upon at the beginning of a subject, and that, as the pupil's power to deal with abstract conceptions grows, practical application of the principles involved be made from time to time to everyday life. It is hardly necessary to add that *slavish textbook teaching* is generally devoid of interest,—a fact responsible for the poor showing many students make in mathematics. The textbook should be used only as a guide. Many of the problems and illustrations contained therein should be discarded in favor of others made or selected by the teacher more directly applicable to the life of the pupil. The interest of a pupil can often be gained by having him formulate problems the solution of which directly affects him by meeting some felt need. Both arithmetic and geometry afford many opportunities for exercises of this sort.

All county high school teachers of mathematics are urged to buy and read critically the books named below, which treat in full detail the points merely touched upon above.

Smith, *Teaching of Elementary Mathematics,* Macmillan Co., Atlanta.

Smith, *Teaching of Geometry,* Macmillan Co., Atlanta.

Cajori, *History of Mathematics,* Macmillan Co., Atlanta.

Young, *Teaching of Mathematics in Secondary Schools,* Longmans, Green and Co., New York.

FIRST YEAR

Arithmetic: Five periods per week during the first half-year. As a school study the aim of arithmetic is to develop within the child the power of dealing with quantitative relationships, of solving problems, met with in every-day affairs of life. As a branch of mathematics it is both simple and profound. The simpler forms, which practically are of the greatest importance, are easily mastered during the period of elementary schooling; while a deeper knowledge of the subject can be acquired only after the fundamental principles of algebra and geometry have been mastered. Hence the proper time to present the deeper arithmetical principles with their applications is

towards the end of the high school course. It is obviously impossible for the average high school student to solve intelligently a large number of the problems in the ordinary "advanced arithmetic" during the first high school year. Many of these problems are mere mathematical puzzles, "whetstones of the wit," devised by the monks of the Middle Ages to pass away the time which hung heavily on their hands.

In view of the foregoing all that is required in arithmetic during the first high school year is a rapid but thorough review of the adopted text. Philips and Anderson's *Arithmetic,* a book designed especially for the advanced grades of the elementary school.

At the outset the teacher should look through this book carefully with a view to selecting the portions that should be emphasized most. Much outside material should be gathered beforehand to supplement the topics that are of prime importance. The sources of this material should be neighborhood activities, other textbooks, and the teacher's own mind. The pupils themselves can contribute many problems from their daily activities at home and on the playground. Such topics as practical measurements; percentage; stocks and bonds; negotiable paper and banking; ratio, proportion and partnership; mensuration; can be given a local color by relating them directly to the life of the community in which the school is situated. Only in this way can the active interest of the pupils be secured. Pupils should be thoroughly drilled in the writing and the reading of numbers, and in rapid processes of adding and multiplying numbers.

Teachers will find many helpful problems in such books as Calfe's *Rural Arithmetic* (published by Ginn and Company) and Butler and Stevens' *Practical Arithmetic* (published by Charles Scribner's Sons).

Algebra: Five times per week during the second half year. In making the transition from arithmetic to algebra careful teaching must be done in order to insure on the part of the pupil a clear understanding of the meaning and relations of algebraic terms. Every teacher should possess a copy of Smith's *Teaching of Elementary Mathematics,* which is full of helpful suggestions as to how algebra should be presented to beginners.

At first, "make haste slowly" should be the watchword of the teacher. After the student has gained some degree of facility in dealing with algebraic processes, more rapid progress can be made.

During the second half year chapters I-IX, inclusive, of the adopted book, Marsh's *Elementary Algebra*, should be completed.

SECOND YEAR

Algebra: Five times per week during year.

At the beginning of the year one or two weeks at least should be spent in rapidly reviewing chapters I-IX, which were gone over during the preceding term. Every effort should be made to have the students master thoroughly the subject as far as Quadratic Equations (chapter XVIII) by the close of the first half-year. Much use should be made of the graph in simple equations.

During the second half year, beginning with Quadratic Equations the remaining portion of the text should be completed.

THIRD YEAR

Plane Geometry: Five times per week during year.

The difficulties that the average student encounters when beginning geometry are due not so much to the subject itself as to the way it is usually approached. If plunged at once into the subject without previous preparation, the student is unable to grasp the meaning of the abstract definitions, or to follow the close sequence of the reasoning processes. The proper method of approach is through concrete geometry,—the drawing of lines, angles, the construction of geometrical figures, and the linear solution of simple problems involving data easily comprehended by the learner,—a subject sometimes called geometrical drawing. If geometrical drawing be taught by the teacher of geometry, it can be made a most effective introduction to this study.

The first five books of the prescribed text, Wells' *Plane and Solid Geometry*, must be completed by the close of the year.

Suggestions: To obviate wrong methods of study on part of the pupil let the teacher discard the textbook at the beginning and teach orally for the first two or three weeks, making free use of the blackboard for illustrations and proofs.

After the pupil has learned how to construct geometrical figures from the data supplied in the theorems and to arrange the various steps of the proof, profitable use can then be made of the textbook.

It is needless to say that the teacher should never hold the textbook before him in order to see whether the pupil is demonstrating his proposition correctly. The teacher must make thorough preparation beforehand if he wishes to teach effectively.

Pupils should be required to construct accurate geometrical figures when demonstrating propositions. Every class room should be adequately supplied with rulers and dividers for blackboard use.

Colored crayon can be used to advantage when it is desired to emphasize or to bring into relief certain parts of a figure or figures. The textbook plates opposite pages 15, 16, 23 indicate how this crayon may be used on the blackboard.

From the very beginning the pupil should be required to solve original problems. The chasm between original problems and the problems already demonstrated will disappear if the textbook is kept from the pupil when commencing the study.

Practical applications of geometrical principles should be made by the pupil from time to time. Many hints as to how these applications may be made can be obtained from Smith's *Teaching of Geometry*, an exceedingly helpful book published by Ginn and Company.

FOURTH YEAR

Solid Geometry: Five times per week during first half year.

Solid geometry must be completed by the close of the first half year.

Algebra: Five times per week during second half year.

During the second half year a thorough review should be made of Marsh's *Elementary Algebra*, and of advanced arithmetic, if time permits.

SCIENCE

GENERAL SCIENCE

FOR the first time general science is to have a place in the high school curriculum of our State. The teacher should know of the demands that brought about the introduction of this subject, for it is through these demands that we are to trace the aims and purposes of the teaching of general science. For many years science teachers have realized the need of such a course as this to be used as an introduction to the more difficult sciences of the high school. As it has been, the pupil is plunged into the rather technical studies of biology, physics, and chemistry with practically no preparation for that kind of reasoning which we call logical or scientific. Hence, a demand for this subject. Again, the busy activities of the world begin to demand that boys and girls be given some form of scientific training early in their high school work. Many boys and girls leave the high school after the first or second year and pass into a busy life filled with its scientific problems without having been given any scientific training. Here we have the second demand for such a course. Then, too, the teacher should realize that this course is not the product of the mind of the fad producer but that the facts which it would teach are as old as the eternal hills themselves and for many years have been taught with much success in the German schools.

From the demands mentioned above, we may easily understand the nature of the aims and purposes of this course. In order to present the subject clearly the teacher must have a clear conception of the things he is to accomplish. We will now consider the two important aims of this course, which may be summed up as follows:

(1) To bring the boys and girls into a closer sympathy and a better knowledge of the physical and chemical phenomena of every day life.

(2) To aid the pupil in his progress toward scientific reasoning and to better meet the problems involved in biology, physics, and chemistry.

Let us consider each of these aims as presented above. Every child has been a student of the physical phenomena about him long before he takes up the study of science. These facts in the child's mind are not arranged in an orderly manner, and so it becomes the duty of the teacher to find out in general the experiences of the class upon the particular subject in hand and then to build to the experiences that they already have. It may be the study of machines. You will first discuss with the pupils in a general way the various kinds of machines with which they are familiar and their uses. This should lead them into a discussion of the fundamental parts of a machine and they will soon realize that any machine, however complex it may seem to be, is made up of certain simple parts. Through this subject the teacher must strive to have the pupil see the things about him and inquire into those things. The child's mind is by nature an inquiring one, forever wanting to know such things as, "What makes it rain?" "What is the sun?", "Why do seeds grow?" etc. Today we are beginning to realize that it is best not to pass lightly by this instinctive and inquiring stage of life, but to endeavor to answer these questions as simply and as clearly as we can. So the teacher must endeavor to explain the phenomena of life in simple terms.

Again, this work should function directly with the community life where it is taught. Every community varies more or less in its needs. Those communities in the southern part of our State would have this science so taught as to explain many of the problems of agriculture, while those of the mountainous regions would have science to deal with the industries of mining and manufacturing. The teacher must not let his own particular training or peculiar preferences overshadow this important part of this subject. He must inquire into the activities of the community in which he teaches and fit the theory of his training to the practical problems about him. From this we will see that some parts of the text will always be more forcibly stressed than other parts.

Now we might think of this subject as helping the pupil towards scientific thinking. Teachers of science well know that there have been too many failures in high school chemistry, physics, and biology. There are two main reasons for this condition, (1) poor teaching and its resultant, (2) the inability of pupils to do scientific thinking. It is to alleviate the

second of these two ills that general science has been placed in an already overcrowded course of study. The skillful teacher will take advantage of this subject to lead the pupil up to a consideration of the more advanced sciences, that he may do the work more quickly and better. Through the laboratory work the pupil will become familiar with the use of apparatus, learn methods of procedure, and grow into the knowledge of many physical terms. Fundamentally, the mind of the child is very illogical, and readily wanders from subject to subject. Then it is of importance that the teacher should not make this subject too technical at first, but lead the pupil gradually into deeper study.

After considering the aims to be attained in teaching this subject, there would naturally follow a discussion of the teaching points best suited to acquiring good results. The course of study calls for five periods a week during the second semester of the first year. This time should be divided into two parts, three periods a week being given to lectures and two periods to laboratory work. The text and laboratory guide are rather extended for one semester's work, so the teacher must be careful to stress the important parts of the subject and go hurriedly over the least important. In general the teacher might do well if necessary to omit the portions that stress chemistry, the extended chapter on musical instruments, and the more technical parts on electricity. The class, if not able to perform all the experiments, should be required to do some on each subject. The laboratory and textbook work should be so correlated that after discussing a part of the text the class will perform the experiments illustrating it immediately. Careful oversight of each step of the laboratory work should be had by the teacher. It is here that the child must begin to become accurate and skillful in the use of apparatus and a close observer of the things that occur. Careless work here will mean much harm done.

In many cases the class in this subject will be large and the teacher will have access to but few pieces of apparatus. The teacher must have his work carefully prepared beforehand so that he may be able to carry on two or three experiments at the same time, working the pupils in groups of two. But this can be done with much success only when the teacher has each step planned. Each pupil should have a loose leaf note book

in which to keep in permanent form the notes and observations made during laboratory work. The pupil should keep this rough data made during the experiment in a cheap tablet, and this together with his observations should serve in making the fuller notes in pen and ink for his permanent note book. These notes should be carefully written up at home and handed in for correction each week. The pupil should write his notes independent of the laboratory guide. In the beginning the notes should be simple and brief, growing more extended and fuller in detail as the work proceeds.

Lastly, I wish to warn the teacher against teaching this subject in such a way that it will become a "fragmentary course" with only bits of science here and there. Care must be taken to see that this work does not degenerate into a mere fad as have so many of the so-called nature study courses of the elementary grades. The different parts of the subject should be so presented that they will seem a part of one great whole. For the teacher to accomplish this with any degree of success he must first of all be well informed as to the important principles of biology, physics, and chemistry; second, he must make a careful study of the current scientific journals; and last but not least, he must be apt in drawing his illustrations from the world's activities about him. The teacher should keep a note book in which to enter illustrations or data of various kinds bearing on the topics of his text. The teacher who goes before his class without a reasonable knowledge of the scientific happenings about him, with no outside illustrations, and with a lesson planned merely from the words of the text, will fail. Due to a lack of preparation the teacher is likely to grow over-technical in his presentation of this subject.

To conclude, let us note some of the requisites toward successful teaching of general science. The teacher must

(1) know why general science came into use,

(2) understand the aim to be attained,

(3) have a thorough knowledge of the community life in which he teaches,

(4) be careful to correlate the text and laboratory work.

(5) stress the important parts and not spend too much time on minor details,

(6) insure correct habits in note book keeping,

(7) avoid the presenting of a "fragmentary course" in science,

(8) make daily preparation from outside related sources.

BIOLOGY: BOTANY, ZOOLOGY, PHYSIOLOGY AND SANITATION

If the above biological subjects are to mean any thing at all in the high school course, they must be taught by the laboratory method. Botany is a study of plants, not of books about plants; zoology is a study of animals, not of books about animals. The student must learn to value his own observations as a way to the truth and get away from the medieval appeal to authority, the blighting effects of which are still so obvious in modern life.

A well-equipped laboratory is therefore necessary and should be provided in every school as soon as possible. However, the introduction of the biological sciences cannot be postponed. The main point is that the student should learn about animals and plants by studying them and not by studying textbooks only. The material is all around us all the time. Animals and plants enter into our every day life in hundreds of ways and the pupils have been studying biology unconsciously from their earliest childhood. The question for us is how can we continue this natural interest and at the same time introduce an orderly arrangement of the facts and an application of them to the daily life of the pupil.

The Laboratory

For information concerning the arrangement of the laboratory consult Ganong's The Teaching Botanist and Lloyd and Bigelow's The Teaching of Biology. A room 18 x 32 feet with the long side north and with three windows on the north side, each of the windows five feet wide, will give space enough for twenty-four pupils. Sinks, service tables, lockers, blackboards, and wall cases must be provided.

Equipment

In the selection of equipment the teacher can get a great deal of help from Hartman's Manual of Human Physiology

intended to accompany Ritchie's Sanitation and Physiology, the adopted text, and Payne's Manual of Experimental Botany. In these books are to be found lists of the apparatus and chemicals indispensable for the carrying out of the required work, also suggestions for cheaper substitutes. This will meet all the requirements for botany and physiology and much of it can be used for zoology, too. At least one good compound microscope should be provided. It should be provided with two objectives (2-3 in. and 1-6 in.) a double nose piece and an iris diaphragm. If funds are available it would be well to add an Abbe condenser and a 1/12 objective. These additions, however, will about double the cost of the instrument and are not necessary save for the study of bacteria, blood, and cell divisions. Write to the firms named on page 135 of Hartman's Manual for catalogs. For every student there should be provided a Coddington magnifier mounted on a simple stand, say of the Barnes type. In general a very small quantity of the chemicals mentioned will suffice. Compare the list with the supplies in the chemical department and make a combination order. It would be well to order ten pounds of formaldehyde, one gallon of ethyl alcohol, one pound of chloroform, five ounces of potassium cyanide (note its extremely poisonous nature). The student should provide himself with note books, drawing materials, and a dissecting set.

Reference Books

As many of these as possible should be secured. It is true that we are to study nature and not books, but other men have labored and we have entered into their labors. The reference books help us to do this. Secure if possible all of the books and bulletins listed in Davison (page 21 et seq.) and also V. L. Kellogg's Insect Stories, J. H. Comstock's Insect Life, H. C. McCook's Nature's Craftsmen and especially C. F. Hodge's Nature Study and Life. Secure also the books and bulletins listed on page 140 of Hartman's Manual. In botany as many as possible of the recent texts, Payne's Manual of Experimental Botany, Atkinson's Botany for Schools, Bergen's texts (Bergen and Davis also Bergen and Caldwell), Coulter, Barnes and Cowles textbook of Botany will doubtless be very helpful to the teacher. Kerner and Oliver's Natural History

of Plants, a large two volume work richly illustrated, should be added to the school library.

The aim of the course in botany, it would seem, is to acquaint the student with the general life history of the flowering plants from seed to seed, and with their gross anatomy and simpler physiological processes, and to help him to do enough classification so that he may become proficient in the use of the key and acquainted with as many as possible of the common wild flowers. Andrews's Botany, the adopted text, is well adapted to this end. It is itself a manual and can readily be followed by any one prepared to teach this subject. It contains more material than can be mastered in a half-year. It will be necessary to limit the course to the first 250 pages. The material is for the most part easily accessible during the second semester. The teacher should see to it that the material called for is at hand and then let each student make the observations and perform the experiments outlined in the text. Require of each student a complete and careful record of the laboratory work. Require written answers to the practical questions or make them the basis of an oral discussion. If managed in this way the course will be of profit and interest. Perhaps some of the omitted parts of the course, especially the parts on fruits, on bacteria and fungi could be brought into the course on horticulture, agriculture, and hygiene.

The scope of the course in zoology is indicated by the text chosen, Davison's Practical Zoology. As an outline of the work I suggest these as the general topics: (1) The structure of insects, using the grasshopper as a type. (2) The life histories of insects, (a) insects of the household, (b) insects of the garden, (c) insects of the field and forest, (d) beneficial insects, (e) insects beautiful and interesting. (See Hodge's Nature Study and Life.) (3) The Arachnids. (4) The Crustacea. Having thus made a survey of the Arthropoda return to Hodge's plan and study the insectivorous animals, namely (5) the toads and other amphibia, (6) reptiles, (7) birds. Use the English sparrow for structural details and then seek to arouse interest in the recognition of birds in the fields. Turn then to Part II and study the (8) mollusks, (9) worms, (10) Hydra, and lastly, the Protozoa. The course should be varied according to the available material and according to the interests of the class. If good results are being secured in the

study of the insects, for instance, and there is material enough for more work on that group do not turn aside from it just in order to "finish the course." In the study of the life histories of insects breeding cages will be necessary. Full directions for their construction will be found in Comstock's Insect Life. Provide also aquaria for the study of the Crustacea, Mollusca, frogs and other aquatic forms. In a word, study as many of the animals alive as possible but on no account allow them to be kept in conditions of discomfort. Treated in this way I am sure that the course will arouse the interest of the student in the animate world around him,—an interest sure to be a valuable asset in later life. In the texts referred to there is no lack of mention of the practical applications of the subject.

It is wholly unnecessary to write a manual for the course in Sanitation and Physiology. Hartman has done that for us and done it well. He says in his preface, "The work prescribed in this manual, which has been specially prepared for use with Ritchie's Human Physiology, is as simple as it is possible to make it and the directions are so detailed that any teacher can carry out most of the experiments." I most heartily recommend its use.

PHYSICS

The course of study for county high schools in this State provides that physics may be taken in the third year of the course, four periods per week during the entire year.

The course of instruction in physics should include:

1. The study of one standard textbook to the end that the student may gain a comprehensive and connected view of the more important facts and the laws of elementary physics.

2. Instruction by lecture table demonstrations in connection with the classroom work to be used mainly as a basis for questioning upon the general principles of physics and their applications.

3. The performance of at least thirty-five experiments by each student.

Throughout the course especial attention should be paid to the common illustrations of physical laws and to their industrial applications. Accordingly the textbook work should be descriptive. Problems are very helpful, but only physical ones

should be attacked. The tendency often is to make the course too mathematical; if computations enter into the work, the quantities should be simple.

The lecture experiments are an important part of the work and should be descriptive and qualitative rather than quantitative. If the apparatus is not at hand and it is impossible to make the experiments in the classroom, drawings on the blackboard are a great aid in helping the pupils to understand the explanations. It is also an excellent practice to have the pupils go to the board and make drawings.

The experimental work is too often neglected, when as a matter of fact no successful teaching of Physics can be had without it. The teacher should insist that at least one set of apparatus for experiments is available. According to the manual to be used, only $25 is needed. If the class is not unduly large, one set might be sufficient, for the experiments may be run in groups, two or three students working on the same experiment. It is also economical to prepare a set of experiments on a certain topic, say mechanics, or electricity, and have the individual pairs work this set at once. The laboratory work should follow the textbook work as closely as possible. The student should be required to take down the data in a large, clean note book, the purpose and descriptions of the experiment must be written up in clear and concise English. It should state the object of the experiment. Following this should be a short enumeration and description of the apparatus to be used. A diagram will often help. The third heading should be the observation made during the experiment. In making observations, all factors should be closely watched and the result tabulated in a rational manner. All calculations should be made in the note book. In the general conclusions, a connected account should be given of the experiment, stating reasons for assertions. Every effort possible should be made by the teacher to encourage the pupil toward original work. The teacher should bear in mind that the simpler the apparatus and the more it can be devised by the pupils the more effective will be the teaching. There are many experiments, as the pendulum, pulleys, forces, etc., that can be made with the simple materials at hand.

Some experiments:

1. Measurements and computations.
2. Weighing.
3. Solution of forces.
4. Determination of "g."
5. Hookes Law.
6. Coefficient of friction and inclined plane.
7. Pendulum.
8. Law of moments.
9. Center of gravity.
10. Pulleys.
11. Levers.
12. Archimedes' Principle.
13. Specific gravity of substances.
14. The barometer.
15. Boyle's Law.
16. Capillary action.
17. Surface tension.
18. The wave length of sound.
19. The velocity of sound.
20. The law of mixtures.
21. Specific heat of substances.
22. Conduction of heat.
23. Heat of fusion.
24. Magnetism.
25. The compass.
26. Static electricity.
27. Studies of different cells.
28. Action of electricity on water.
29. Electric motor and electric bell.
30. Images in place mirror.
31. Reflection from place mirror.
32. Test the power of different sources of light.
33. Beam of sunlight through prism.
34. Study of beam of sunlight through prism, in refraction and total reflection.

The manual recommended for use, by Dinsmore Alter, of the University of Alabama, gives a list of experiments including the more essential ones. The apparatus required is enumerated, the price being only $22.10.

CHEMISTRY

The subject of Chemistry as taught in the high schools has become one of the most important in the course of study and if taught in the right spirit and manner may become of great value from an educational as well as practical standpoint.

In making the subject practical the fundamental principles of the science must not be overlooked.

Perhaps in no other study or subject is the personality of the instructor so important. A poor teacher with the very best equipment and apparatus will fail, when an enthusiastic teacher much interested in the work can with very little equipment make the branch of great interest and value.

The course should extend through the whole year and should be given three recitation periods of forty minutes each and two double periods for laboratory work, or five recitation periods for one-half the year and five double periods for the laboratory work the latter half of the year. The writer has found the latter plan to work better and give better results than the former.

It is of great importance that the instructor adhere to the adopted text and supplement it if he cares to do so with other books or his own experience, for most of the texts are written in a logical manner and the best results may be gotten in this way.

High school students should never be sent to the laboratory alone to work but should be always under the personal direction of the instructor. Outside of the Chemistry to be learned in the laboratory, a great deal can be gotten from making and arranging apparatus, the care of and acquaintance with chemicals and supplies, and the keeping of neat and accurate note books. Careless and slovenly work should never be tolerated.

There should be a place for everything and everything should be kept in its place.

In making experiments all apparatus and supplies should be cleaned and put up before another experiment is begun.

Notes of each experiment should be written during or immediately after the experiment has been performed.

Notes should be written in the laboratory and books should never be taken from the room without special permission of the instructor.

A very good form to use in writing notes is as follows.

*Date,*_____
*Time required to perform,*_____
*Object of experiment,*_____
Apparatus used, _____
Chemicals used, _____
Method, _____
Equations, _____
Results, _____
*Observations and remarks,*_____

In no case should more than one experiment be put on a page in the note book, and in some instances a number of pages may be required for one experiment.

There are all kinds of note books, but one of the best consists of a good strong cover with loose leaves to be added as the occasion demands.

Notes should be written with a pencil and never with pen and ink. Sketches and drawings of apparatus used, though they may be crude, will be of great value and interest in the note book.

The equipment actually required to do good work is very small indeed and no teacher may excuse himself by saying that the amount of his supplies was limited.

Be willing to make a small beginning and add to it.

Of course, there must be some chemicals purchased and also some equipment, but the ingenious teacher can improvise a great deal of apparatus and many chemicals are household articles.

Any nearby druggist will be glad to donate to the school large-mouth quinine bottles which make the very best gas receivers. Pound bottles, in which fluid extracts come to the drug stores and which are generally colored brown and have glass stoppers, make splendid solution bottles, while perfume bottles in the eight or sixteen ounce size will be found the very thing for re-agents.

A nearby newspaper man will be glad to cut out of waste paper in his office powder papers of all sizes. A package of them on every desk is of great convenience.

Cigar boxes properly labeled make splendid containers for common articles and supplies.

There should be containers for everything, no matter how commonplace, and everything, no matter how commonplace, should be labeled.

Pupils should always call for supplies from the instructor and never be allowed to get them from the stock themselves.

Laboratory tables may be made by any carpenter and a very good but simple and effective one may be made as follows: Make a strong pine table three feet high, three feet wide, and in multiples of four feet in length. It is well to make the legs of square pieces about three-by-three and place them four feet apart to make the table rigid. A partition should be set up lengthwise the table about eighteen inches high with cross partitions the same height every four feet. For each four feet of table you then have two good desks facing each other. A shelf about four inches wide and one foot above table should be put lengthwise for re-agent bottles. Tables should never be painted but simply covered with a paraffine dressing and polished from time to time.

Plans and details of neat and inexpensive laboratory desks, supplied with drawers and lockers, can be obtained from Prof. M. T. Fullan, of the Department of Mechanical Engineering of The Alabama Polytechnic Institute.

A good water and acid proof apron may be purchased for fifty cents from the Cabinet Mfg. Co., Quincy, Illinois.

While a textbook is important, and while a manual giving directions for the experiments is almost indispensable, yet to blindly follow the directions and mechanically record what is done without thinking of the principles involved, will be of little value, and such a procedure should be guarded against by the teacher.

There are a great number of good supply houses and we give below the names of a number from whom chemicals and supplies may be bought:

Eimer and Amend, New York; Central Scientific Co., Chicago; Queen and Co., Philadelphia; Columbia School Supply Co., Indianapolis.

It is hardly necessary to give a list of the supplies and chemicals needed for a splendid list of individual apparatus is given on page 167 of the adopted text. Lists of chemicals are given on pages 169, 170 and 171.

In a one year course in chemistry about sixty experiments can be readily performed and with that number in view we have selected experiments from the textbook which bring out in the best manner the practical phases of Chemistry, including a number of good experiments in household Chemistry.

We have added at the end of the list a number of supplemental experiments, which may be used, if time permits. The numbers in parentheses refer to the numbers of the experiments as given in Newell's General Chemistry:

List of Experiments

1. Physical and Chemical Changes. (2)
2. Physical and Chemical Changes. (5)
   In connection with this experiment, heat a small piece of platinum wire in the flame and note that it only undergoes a physical change.
3. Preparation of 0 from $KClO_3$ and MnO_2 (6)
4. Preparation of oxides of S, C, and Fe; also show formation of oxides of P and Mg. (6)
5. Preparation and properties of Hydrogen (10)
6. Water in Foods. (14)
7. Physical Properties of Water (15)
8. Chemical Properties of Water (16) A, a.
9. Solubility of Gases in Water (46) b.
10. Solubility of liquids in Water (18)
11. Solubility of solids in Water (19)
12. Preparation of distilled Water (26) I,
    A simple condenser may be made by running a glass tube through an Argand lamp chimney, the ends of the chimney being closed with perforated corks.
13. Qualitative composition of Water.
    Instead of Experiment 29 A, hold a dry beaker or test tube, inverted over a lighted jet of Hydrogen, and note that the Hydrogen burning in the Oxygen of the Air forms water, which is deposited in drops on the sides of the vessel.
14. Electrolysis of Water (30)
    A very simple apparatus for the electrolysis of water can be purchased or improvised at a cost of from $1.00 to $2.00.
15. Preparation and properties of Chlorine (33)

16. Preparation and properties of HCl. (35)
    Also apply test III b to a solution of some chloride, as NaCl.
17. General properties of Acids. (37)
18. General properties of Bases (38)
19. A general property of Salts (39)
20. Neutralization (40)
21. Preparation of Salts (79)
22. Preparation and properties of Nitrogen (45)
23. Preparation and properties of Ammonia and Ammonium Hydroxide (46)
24. Preparation of Nitric Acid (47)
25. Properties of Nitric Acid (48)
26. Tests for Nitric Acid and Nitrates (49)
27. Per cent of Oxygen and Nitrogen in Air (57)
28. Amount of Carbon Dioxide in Air (59)
29. Distribution of Carbon (80) b, d.
30. Properties of Charcoal (82)
31. Preparation and properties of Carbon Dioxide (83 and (84)
32. Test for Carbonates (86)
33. Preparation and properties of Acetylene (87)
34. Preparation and properties of Illuminating Gas (94)
35. Reduction and Oxidation with the Blowpipe (97) A, a, and (97) B, b.
    If a gas supply is not available, an ordinary candle may be used.
36. Flame tests for K, Na, Li, Ca, Sr and Ba, as indicated under the tests for the metals named.
37. Physical and Chemical properties of Sulphur (130) and (133)
38. Preparation and properties of Sulphur Dioxide and Sulphurous Acid (134)
39. Properties of Sulphuric Acid (135) b, c. Tests for Sulphuric Acid and Sulphates (136)
40. Preparation and properties of Hydrogen Sulphide. (138)
41. Preparation and properties of Sulphides (139)
42. Properties of Borax and Tests with Borax beads (143) and (144)
43. Preparation and properties of Hydrofluoric Acid (152).
44. Preparation and properties of Bromine and Iodine (153) and (156)
45. Tests for free Iodine and Iodine in Iodides (157) and (158)
46. Tests for Phosphoric Acid and Orthophosphates (159) b, and e.

47. Tests for Arsenic by Marsh's or Gutzeit test (See other texts).
48. Displacement of Metals (184)
49. Aluminum Salts as Mordants (210)
50. Properties and deportment of Ferrous and Ferric Compounds 217, 218, 219)
51. Qualitative analysis of a solution of Lead, Silver and Mercurous Salts. (238)
52. Fehling's Test for Sugar (106) and (107)
53. Properties and Detection of Starch; also Conversion of Starch to Sugar (108) d, e., (123) and (124)
54. Experiments with Acetic Acid and Vinegar (110), (111), (112).
55. Testing Baking Powders (113)
56. Tests for Proteins (118 A), (111 B)
57. Preparation of Invert Sugar from Cane Sugar (121)
58. Testing for Sugar in Vegetables and Fruits (122)
59. Alcoholic Fermentation (127)
60. Preparation and properties of Formaldehyde and Tests for Formaldehyde in Milk (128)

Supplementary List of Experiments

8 A, 8 D, 11, 16, 50, 221, 114 a, and c, 115C, 116c, 116 d.

AGRICULTURE

ELEMENTARY AGRICULTURE—FIRST YEAR

BEFORE each recitation the teacher should have thoroughly in mind the main points to be taught and should have the necessary materials at hand. He should constantly remember that a simple experiment, well executed by the class or by himself in the presence of the class will teach a principle much more forcibly than a long discussion on his part with a textbook in his hand.

The teacher who wishes to make a success can secure many free publications from the Department of Agriculture that will be extremely helpful. There are many excellent books bearing on different phases of agriculture which should be secured and placed in the teacher's library. Among the many books that would be helpful in teaching this subject are the following:

Soils, by Lyon and Fippin; Soils and Soil Fertility by Whitson & Walster; Southern Field Crops by Duggar; a set of Year Books of the United States Department of Agriculture.

At the beginning of the school year or before, all materials for the various exercises should be collected or arranged for. A certain number of field trips should be planned, and before each trip is made the teacher should go over the ground himself and determine what observations should be made by the class. The teacher should enlist the interest of the farmers, should consult with them freely, and should arrange with them for the class to perform some experiment on their farms.

Each pupil should have a note book in which to record all experiments and observations. This note book should be examined once a week to see if the experiments and observations are properly recorded; and if they are not, the exercise should be repeated and reported again.

The most effective way to teach agriculture is not to be a slave to any one textbook. It should be taught largely through laboratory exercises, excursions to fields and orchards and farms, and through the observation of plots and school gar-

dens. Many class exercises may be made much more profitable by having in the hands of the pupils or in the hands of the teacher the object under consideration, so that the words of the teacher will represent concrete objects. Children learn by eye and ear.

The teacher need not follow the exact order of subjects as treated in the book. For example, he should feel free to begin with chapter IX,—The Plant as Related to the Soil,—turning back to the beginning after completing chapter XI. Similarly any chapter in the text may be assigned for the lesson at the time when there is available the largest amount of material to illustrate that subject.

In teaching the earlier chapters a shallow box, 12 x 16 x 14 inches, filled with clean sand, will be useful as a soil-filled "flat" in which to root cuttings of figs, tomatoes, geraniums, coleus, and many other cuttings.

All experiments described in the text should be performed and additional experiments may be selected from other texts and from Bulletin No. 408, Office of Experiment Stations, United States Department of Agriculture.

In studying soils and particular crops the class with the teacher should make a field trip to study these subjects and to make a collection for further use in the classroom.

Free use should be made of old tomato cans filled with soil as a means of showing best conditions for the germination of seeds and the growth of plants, and they may even be used for showing the effects of various fertilizers on the early growth of plants.

Make a school garden, which is indispensible in the most effective teaching of agriculture. Besides the plots cared for by each pupil, a few plots on a larger scale may be cared for by the school as a whole, or by some class,—either to show results of several different treatments of soil or as a business enterprise.

In general, practice in the selection of seed corn, cotton, etc., should be made, by permission, in the fields of nearby farmers.

Encourage the formation of a Boys' Corn Club and of a Girls' Canning Club, and with this in view, correspond with the Extension Service of the Alabama Polytechnic Institute, Auburn, Alabama.

Make use of any suitable apparatus from the Chemical Laboratory. In addition, the following will be useful in teaching soils:

One dozen student's lamp chimneys,

One dozen glass tumblers,

One set of soil sieves, preferably 20, 40, 60, 80, and 100 meshes to the inch,

One soil thermometer,

Two dozen 5-inch flower pots,

Samples in bottles of all fertilizers mentioned in the text.

It will facilitate the work if specimens of crops and forage plants can be collected in advance, for example:

Two or more plants of each of the leading types of cotton.

Two or more bushels of corn for judging.

Six or eight corn plants with the ears on them.

Twelve or more plants of each of the following: Oats, wheat, vetch, clover, soy beans, cowpeas, sorghum.

Before teaching those chapters of the elementary textbook that deal with animals, the teacher should read the paragraphs of this manual relative to animal husbandry; likewise before teaching the horticultural chapter he should read the paragraphs relative to Horticulture, for the same principles apply in the elementary as in the more advanced teaching of these two subjects.

HORTICULTURE—SECOND YEAR

If time is limited, begin with Chapter X, p. 150, of Green's Popular Fruit Growing.

Throughout the work let special attention be given to the reasons, or principles, on which all skillful practice rests.

Instead of undertaking a study of all the classes of fruits, confine attention to from four to six important types adapted to Alabama conditions, viz: the apple, peach, grape, strawberry. In the southern part of the State the pecan and Satsuma orange may be advantageously included.

Starting with the apple, Chapter XI, lay emphasis on the summer and fall varieties for ordinary conditions in Alabama. Emphasize the importance of the *home orchard*.

To make the work as concrete as possible study trees and plants themselves, and the conditions surrounding them, which

affect their behavior. Arrange to use for this purpose orchards in the neighborhood. Require the students to collect illustrative materials of various kinds.

Have the students bring in lists of varieties, say of apples, growing at their homes or in their neighborhood,—also specimens of fruit when obtainable. Let them make notes on the ripening seasons and merits of the several varieties. Have them examine specimens as to typical form, size, color, excellence, or the presence of imperfections, such as fungus, spots, bruises, decay, irregularities of surface, worm holes, or San Jose Scale.

Require the student to try to connect the effect with the cause by inquiring into the conditions under which the trees or orchards have been growing, character of soil, drainage, elevation, crops previously grown on the land, care the trees have received in the way of pruning, tillage, spraying, and fertilization.

Having found a number of factors possibly bearing on the success or unsatisfactory behavior of the trees or orchard, let the student search for the explanation, or a discussion of these *limiting factors* under Chapters I to VIII, and finally prepare a written report on the results of his findings, for reading and discussion in class.

A similar plan may be followed in studying the other types of fruits mentioned. If specimens of fruits can be had, so much the better. This is not absolutely essential however. The subject of study is how to produce good fruit, rather than a study of fruits themselves.

Let the subject studied be Horticulture, not a series of set lessons in the textbook. Observation of fruit trees, actual plantings, and other practical work should constitute an important part of the teaching. This arouses a spirit of investigation and trains the student to help himself rather than to depend upon others.

References:

Bailey's Encyclopedia of Horticulture, New Edition. Macmillan Co., Atlanta, Ga.

The Garden and Farm Rule Book, Bailey. Macmillan Co., Atlanta, Ga.

Thomas' American Fruit Culturist, Wm. Wood & Sons, New York, N. Y.

Bulletins of Experiment Stations; Special numbers of Farmers' Bulletins, United States Department of Agriculture, Washington, D. C.

FIELD CROPS—THIRD YEAR

In fulfillment of the required work in agriculture the teacher may select any one of the four following subjects: Field Crops, Poultry, Animal Husbandry, and Dairying.

One of these subdivisions of agriculture is required in the first semester of the third year of the course for three periods per week.

Text, "Southern Field Crops," by J. F. Duggar.

In the new course of study the elementary text on agriculture used in the first year of the course treats of the principles of agriculture and devotes but few pages to any of the field crops. This makes it especially important that field crops, if taught at all, be thoroughly taught in the second year.

The object in teaching this subject is to make the student acquainted with the principles on which the growing of each field crop depends and in addition to familiarize the pupil with some of the best practices in connection with each crop.

The pupil who is already familiar on the practical side with crops can usually derive most profit from a systematic study of the subject because in this study he finds the explanation of many of the facts already more or less familiar to him. Moreover, his presence is an advantage to the class and to the teacher because it serves to bring to the class reports on the practices that are considered best in the locality. These practices may sometimes be more advisable than those mentioned in the book as typical. When this is the case, the teacher should encourage the pupils to analyze local conditions and to point out why the practices followed on the best farms in the neighborhood are better for the local conditions than those prevailing elsewhere.

In other words, pupils should be encouraged to independence of thought and statement, no matter though this may seem to run counter to the results described in the text.

In teaching field crops it is not essential that the order of subjects be exactly that in which they occur in the book. For example, when the time approaches for harvesting corn and hence for selecting seed ears in the field, the teacher should immediately turn to the subjects most appropriate for the season, especially Corn Breeding, or Improvement, Corn Harvesting, and Corn Judging. If it is necessary to skip any subjects in order to give the instruction in the text at the same time that the laboratory practice can be given in the field, such subjects should be studied at a later date.

Teachers should feel free to omit the subjects of tobacco, hemp, and cassava.

The teacher should use discretion as to whether that part of the text printed in fine type should constitute a part of the subject on which the pupil is required to *recite*.

Where there is any difficulty in covering all the ground in the time required, it is preferable to devote as much time as practicable to the laboratory exercises suggested at the end of each chapter, even if this should make it necessary to pass over rather hastily some of the fine print.

One method of getting the most out of that part of the text printed in small type, without taxing the pupil's time for preparation is to make the fine print a subject chiefly for discussion in class.

In regard to the laboratory exercises it cannot be expected that every one of these will be feasible for each school. However, the laboratory exercises should be considered an important part of the work and usually the results of laboratory work should be handed in as written reports.

Before taking up each subject the teacher should write to the U. S. Dept. of Agriculture at Washington for any of its Farmers' Bulletins mentioned as available at the end of each chapter, and to the Experiment Stations for other pamphlets listed in the text.

POULTRY

Text, "Farm Poultry," by George C. Watson.

Make the instruction as practical as possible. Make it apply to average farm conditions, rather than go into detail as to the methods and practices of the large poultry concerns.

The four corner stones to successful poultry raising are:
Good houses, properly located;
Good birds, carefully bred;
Good feed, skillfully fed;
The ability to hatch and rear chicks.

After the types of poultry houses have been studied as to their shape, size, doors, windows, and methods of ventilation, it would be well to have the students make a model of an up-to-date poultry house in their manual training course. When locating a poultry house a great many things should be taken into consideration, such as soil, climate, size of farm, lay of the land, water supply, and shade.

Do not spend a great deal of time taking up the separate breeds of poultry but show the differences between the three different types as the meat, egg-laying, and general-purpose types. Emphasize the importance of having well-bred fowls, uniform in size, shape and color, and possessing constitutional vigor.

Take up the feeding of poultry in detail, showing why it is important, and why some feeds are better suited than others. Tell how often and at what times the feeding should be done, and why a great variety of feeds is desirable.

If they can be obtained, an incubator and brooder would be a great help and a point of interest in teaching poultry work. Do not overfeed the young chicks. It is better to use dry feed for young chicks. Provide plenty of pure water. Emphasize sanitary conditions in the rearing of the chicks.

Spend the most of the time on chickens and comparatively little time on ducks, geese and turkeys.

Prevention of disease is much easier than the curing of same. Keep in mind clean housing, clean feeding, clean yards, and clean birds, along with the four main points mentioned above.

DAIRYING

To get the best results from this work, interest must be aroused in the industry. This can best be done by an enthusiastic summary of the opportunities in dairying and its advantages over other industries. The four factors making great opportunity in dairying are: Mild climate, luxuriant growth

of all forage crops, cheap lands, and best markets for dairy products. The advantages of this industry over others should be emphasized and the following points noted and illustrated: Daily cash returns, providing a market for crops on the farm, building up the land, and enabling the boys and girls to help earn a living. It is also a business easily entered, that keeps the laborer busy the year round, and continues to bring in the cash without selling the cows, as is necessary with beef cattle. A mere statement of these facts is not sufficient, and advantage must always be taken of opportunities for illustration and demonstration.

Dairy production, the first point to be considered in teaching dairying, is not treated in the adopted text. The necessity and the means of cheap production should be emphasized. Permanent pastures, leguminous crops, and silos will solve the feed problem. Better cows, secured by using a pure bred bull, raising the heifer calves from the best cows, and weeding out the poor producers, will aid in cheapening the cost of production. It is not expected that the dairy equipment will consist of much more than a Babcock testing outfit, a small barrel churn, and a few dairy utensils, but these should be used to best advantage by making trips out to neighboring farms, and starting herd record work by weighing the milk and testing it monthly for butterfat.

But little time should be given History of Milk Tests, pages 35-49, and only the first nine chapters of the book should be studied, with the exception of reading chapter 13 and pages 245-6-7 of chapter 14, and a demonstration of Dutch cheese making, page 232. The teacher will find it a great help to have Dairy Cattle and Milk Production, by Eckles, and Animal Husbandry for Schools, by Harper, which are published by The Macmillan Company, New York, N. Y. The following bulletins can be obtained upon request and every teacher of Dairying should have them: Judging Live Stock, Circular 29, Indiana Experiment Station, Lafayette, Ind.; Farmers' Bulletins, U. S. Dept. of Agriculture, Washington, D. C., Nos. 106, 267, 292, 578, 589, 413, 541 and 355. The Animal Husbandry Department, Auburn, Alabama, can also furnish you bulletins on Silos and Silage, Herd Record Work, Feeding and Managing Dairy Cattle, etc.

On the trips to the country, the construction and arrangement of the dairy building should be studied, questions asked of the owner regarding the breed of cattle, feeding, care, etc., and if possible the weighing and testing of the milk should be taken up, thus giving practical demonstrations for the students in herd record work. On all such trips no adverse criticism should be made of the dairyman's methods, equipment, etc., for this can be discussed later. The impression should always be given the dairyman that the class is seeking information and not trying to give it. Too much time cannot be given this practical work of demonstrations and visits to the neighboring farms. The whole work should be to interest the pupils in this great industry, to show them better methods and means of bettering conditions in their own home communities. It is quite immaterial to the average student as to the chemistry of the non-volatile fats, etc., but the making of good butter, the production of clean milk, and the means of making good profits from the dairy business, are very vital to him.

ANIMAL HUSBANDRY

The text adopted for this work is rather extensive for the amount of time allowed for the instruction in this subject. The teacher must bear this in mind and not spend too much time in the study of the history of the various breeds of live stock, but devote considerable time to the study of each class of live stock as to the judging, the feeding, and the management.

Take the class in Animal Husbandry to the neighboring farm where pure bred stock of various types and breeds can be studied. The instructor will make sure that the student is acquainted with all of the points of the animal before the work with the score card is undertaken. The score card system is an excellent one to accustom the student to examine the animals in detail. After the student has scored at least two animals in each class of live stock the comparative system of judging may then be adopted if enough animals are available for this type of judging.

The instructor will find circular No. 29, Live Stock Judging for Beginners, Purdue University, LaFayette, Indiana, an excellent bulletin for suggestions as to the beginners' work. Every instructor should have a copy of this bulletin.

In studying the feeding of each class of live stock it would be advisable to take the student to the feed lot and have him weigh out enough feed for an animal; make out a list of feeds that the farmer has access to; get the market value of these feeds at the feed store; and then figure out the cost of each feed.

For the management work, it would be advisable to study the types of barns, sheds, etc., used for the housing of the different classes of animals and the care that the animals should receive.

In visiting farms and stables to study these features it would be advisable for the student and instructor not to suggest too many ideas to the owners of the place, but reserve their opinions until the class has returned to the classroom. The visit to the farm should be in the nature of seeking information. If this system is followed the average live stock man will give a good many valuable suggestions to the class.

HOME AND SCHOOL GARDENING

GARDENING must be given a definite place on the weekly program and full credit should be given for work done in the garden at home as well as that required at school. The elementary text on agriculture, by Ferguson and Lewis, which is taught during the first semester to all first year pupils, will supply basal instruction for the four-year garden course. For reference the teacher should have a number of texts on school gardening and vegetable growing. and the school library should be supplied with all available bulletins on the subjects.

Each school should have not less than one-half acre for garden purposes. One and one-half to two and one-half acres of land would afford a sufficient area for gardening, and supply a minimum area for observation plots for teaching the agriculture in the course. If the land available is of small area, the garden should receive first consideration. In almost every case it will be found possible to rent a suitable area, convenient to the school, for agricultural purposes. Frequently vacant lots will be loaned by the owners, if only the needs of the school are brought to their attention. It is much more satisfactory, however, to lease the land for a definite period.

Garden work, embracing the growing of both vegetables and flowers, which is required of all pupils in all the grades, has fallen short of one of its chief purposes when the results of the work done at school are not felt in the homes of the pupils. It is, suggested therefore, that first year pupils be required to cultivate a variety of vegetables in the school garden, and encouraged to grow one crop or more in a portion of the home garden; that the second year pupils be required to cultivate vegetables and flower gardens at school, and encouraged to plant a limited area to vegetables at home; that the third and fourth year pupils be required to care for the lawn plots and shrubs at school as well as to grow vegetables. The girls should also be encouraged to cultivate flowers at home, and the boys to cultivate some one vegetable crop for commercial purposes.

Let it be remembered that whereas work in the school garden is required of all the pupils, the growing of vegetables or flowers at home should be encouraged but never required. The teacher of gardening should put a premium on home work.

Good results will be secured in those home gardens which are visited by the teacher. He should at all times remember that the growing of vegetables and flowers at school has as one of its chief objects the stimulating of the production of wholesome vegetables for the home table and the beautifying of the surroundings of the home.

Garden work *must never* be assigned as punishment. It must have a place on the weekly program *during school hours.*

LOCATION OF THE GARDEN

Any well drained plot of ground near the school building, preferably on the school property, will provide a suitable location. If available land is not well drained, the teacher of agriculture has a splendid opportunity for some practical lessons in drainage.

FENCING

The teacher should see that the garden is protected against the depredations of animals and especially chickens before any seed are planted. A fence built of chicken wire is a safe and cheap protection. On one or both sides of the fence some kind of hedge, for example Amoor River privet, should be planted. In a short time, such a hedge will give the garden a beautiful setting as well as splendid protection.

PREPARATION OF THE SOIL

The preparation of the soil is such an important factor that it has been well said, "Any crop is half made before it is planted." Thorough prepartion of the soil is, therefore, recommended as absolutely essential to successful gardening.

In breaking the land turn it from one-fourth to one-third deeper than it has been plowed before and follow in the furrow with a sub-soiler or scooter point, breaking the sub-soil several inches deeper. This gives depth of soil and provides a reservoir to hold water during dry seasons.

In case the land which is to be used for garden purposes is a fallow, or new ground or a very poor piece of soil devoid of vegetable matter, it is desirable to turn it early in the fall and sow to some cover crop. Turn the land in early spring and put in the best possible state of cultivation for the vegetable crop.

In extreme cases it may be well during the summer to follow the above mentioned crop with some nitrogen gathering crop, and in this way lay a good foundation for successful work. Under such circumstances it would be advisable to rent a garden plot temporarily. The first effort at gardening must not be a failure, hence the above precaution.

REFERENCES ON SOIL PREPARATION

Agriculture for Southern Schools by Duggar, Section XII, pp. 70-73; Elementary Principles of Agriculture by Ferguson and Lewis, Chapter IX, pp. 40-51; Gardens and Their Meanings by Williams, Chapter III, pp. 45-60; Farmers' Bulletins Nos. 20, 77, 44, 245, 257, 406, 266, 421, and 192; Circular No. 154, of the University of Illinois., Urbana, Illinois.

TOOLS

In order that each pupil may be provided with an ideal equipment of tools, he should have a garden fork, rake, hoe, 100 foot cord, tape line, and trowel. However, if only a limited number can be had, the tools purchased may be used in common and at least one or two of those just mentioned dispensed with entirely. Provide a place for the tools and see that they are kept, under lock, in that place.

ROTATION OF CROPS

It is possible to grow a succession of crops, thereby keeping the garden green and supplying the home table with wholesome vegetables during the entire year. Circular No. 14, Parts I and II, entitled Vegetable Growing in Alabama, may be had by applying to the Director of the Experiment Station at Auburn, Alabama. This circular gives valuable information on the growing of vegetables, and shows in tabulated form the planting and maturing season of each.

HOT BEDS AND COLD FRAMES

Every school garden should have one or more hot beds and cold frames for growing winter crops of tender vegetables and securing early plants for the spring garden. No garden is complete without them. The construction of the frames and making of the beds are fully described in the above mentioned Circular, No. 14.

FERTILIZERS AND PLANT DISEASES

These topics are also fully discussed in Circular, No. 14. In writing for this circular be certain to ask for both Part I and Part II.

Other references on the three topics just named are: Circular 13, School Gardening, Experiment Station, Auburn, Alabama; Bulletin No. 9, Vol. 33, Whole Number 174, Truck Growing in North Carolina, Department of Agriculture, Raleigh, North Carolina; Farmers' Vegetable Garden, Bulletin No. 105, University of Illinois, Urbana, Illinois.

THE SUMMER GARDEN

It is important that the school garden be cared for during the vacation period. In planning the succession of crops, provision should be made for the planting of some staple vegetable in the garden just as soon as the early vegetables are gathered.

If tomato plants are set out on each plot as the various vegetable crops are gathered, the garden will be kept green during the summer and provide a fine lot of fruit, which may be sold fresh or canned. This plan would enable the teacher to organize a high school tomato club and in a year or two open up a profitable industry for the girls of the school, which if conducted along business lines would spread throughout the county. Alabama is buying from other states entirely too many cans of tomatoes, beans, corn, okra, sweet potatoes, and fruits of various kinds. The county high schools have a great opportunity to encourage the home-canning industry through the garden activities of the school.

The principal will find it possible to have the summer garden cultivated and the vegetables marketed by industrious school

boys, who should be compensated with a part of the profits. The balance should be deposited in the bank as a fund for equipping the gardeners with tools.

EXHIBITS AND PRIZES

A day during commencement may be designated as Agricultural Day. On such an occasion have the pupils' exhibits of garden and home products in the school building. The invited friends and patrons may then be taken to visit the school and home garden plots of the prize-winning pupils.

Prizes should be provided for the successful gardeners.

AN IDEAL GARDEN PLAN

That school garden which provides room for the growing of vegetables, flowers, economic crops, and has in it a teacher's laboratory for growing cuttings of various kinds, and seedlings for the purpose of teaching the principles of budding and grafting, as well as a space for the growing of lawn grasses, is fulfilling its full mission. Such a garden area might contain a communal flower and vegetable garden to accommodate those for whom individual plots cannot be provided. Individual garden plots have an advantage over the row-to-the-pupil method of gardening, though the latter plan is practised by a number of experienced gardeners. The communal gardens should be cultivated by the row method.

Where water is available it should be supplied to the garden. Two or three hydrants conveniently located would aid materially when water is needed for young plants and also during excessive dry seasons. The lack of a water supply should not prove a too serious handicap for gardening.

SUGGESTED DIMENSIONS

Individual gardens 8 feet by 10 feet are workable, though a larger garden is preferable. When it becomes necessary to give a smaller space to the pupil, it is suggested that a double space be given two pupils, who shall work the plot cooperatively. Remember that cultivating intensively enables one to grow many vegetables on a small space.

The walks surrounding the plots should be at least two feet wide, and the main walk not less than five feet. Plots should not be thrown up as ridges, nor should the walks be excavated. Cultivate the plots on the level and the walks will be lowered by the footsteps of the pupils.

PLANNING AND PLOTTING

Planning should be begun before the soil is broken. A successful garden must first take form in the teacher's mind, then on paper, being drawn to a scale, and then accurately plotted on the ground in miniature. When the pupils have an accurate idea of what the garden means, and some mental conception of the work before them, the teacher is ready for a successful development of the garden.

PUBLICATIONS ON VEGETABLE AND FLOWER GARDENING

(Prices may be had by writing direct to publishers.)

1. The Principles of Vegetable Gardening—Bailey. The Macmillan Co., Atlanta, Georgia.
2. Vegetable Gardening—Green. Webb Publishing Co., St. Paul, Minn.
3. The Beginners Garden Book—French. The Macmillan Co., Atlanta, Georgia.
4. Garden Making—Bailey. The Macmillan Co., Atlanta, Georgia.
5. School and Home Gardens—W. H. D. Meier. Ginn and Company, Atlanta, Georgia.
6. Gardens and Their Meaning—Dura Williams. Ginn and Company, Atlanta, Georgia.
7. The Amateur's Practical Garden Book—Bailey and Hunn.
8. The Garden and Its Accessions—Loring Underwood. Little, Little, Brown & Company, 254 Washington St., Boston, Mass.

Bulletins Which May Be Had on Request

(The following Farmers' Bulletins may be had by applying to your Congressman.)

The Home Fruit Garden—Preparation and Care, Farmers' Bulletin No. 154.

The School Garden—Farmers' Bulletin No. 218.

Tomatoes—Farmers' Bulletin No. 220.

Schools Gardens, Bulletin No. 160. Office of Experiment Station.

The Following Bulletins May be Had Without Cost by Applying to Addresses Given.

Vegetable Gardening, Vol II, No. 33, Garden Series. Cornell Reading Courses, Ithaca, N. Y.

Children's Home and School Gardening, Vol I, No. 4, Extension Bulletin, Rhode Island State College of Agriculture, Kinston, R. I.

Elementary Agriculture and School Gardening at Winthrop, Bulletin No. 4. Vol. III. Winthrop College, Rock Hill, S. C.

Vegetable Growing in Alabama, Circular No. 14, Parts I and II. P. P. Williams and H. M. Conolly, Auburn, Alabama.

School Gardens, Report of the Fairview School Association for 1910. Fairview Garden School Association(Yonkers, N. Y.

The Farmers' Home Garden, Bulletin No. 122. Agricultural Experiment Station, Morgantown, W. Va.

Industrial Contests for Minnesota Boys and Girls—1910. Ex. Bulletin No. 3. University Farm, St. Paul, Minnesota.

The Flower Garden, Vol. II, No. 35. Cornell Reading Course, Cornell University, Ithaca, N. Y.

Window Gardening, by H. D. Hemenway, Department Pamphlet No. 1. American Civic Association, N. American Bldg., Philadelphia, Pa.

HISTORY

TODAY we insist that all education shall be, in a broad sense, useful. We endeavor to give our boys and girls the training that will best fit them to perform their share in the various activities that make up what we call life. Before giving any subject a place in our course of study we try to ascertain whether it is of real value in promoting this end. It is, therefore, perfectly natural both for teacher and for pupil to ask at once the question.

WHAT IS THE USE OF HISTORY?

Many answers may be given. We mention the following:

1. *It prepares for citizenship.*

Certainly the State can have no higher purpose in educating its youth than to train them to be good citizens, able to trace clearly their duties and inspired with a fixed purpose to perform them. Now the study of history can, and should, help to do this. It shows how men have step by step worked out a clearer vision of what these duties are, and it arouses a natural interest in public affairs by telling the story of men who have become great by giving themselves to the service of their country.

2. *It gives the background for other things.*

Not one of man's greatest achievements can be understood without reference to its environment. Shakespeare can not be separated from the age of Elizabeth. Martin Luther was a part of the times in which he lived. The pyramids would never have been built in Greece, nor the Parthenon in Egypt, nor a Gothic cathedral in ancient Rome. Whatever has been done, not only in literature, art, and science, but also in government, in business, in every day affairs, has grown out of conditions that went before and has been colored by the circumstances of the time. Nothing of importance, therefore, in life can be well understood without some knowledge of History.

3. *It explains the present.*

The great men that interest us most are those of our own day. The great movements that concern us most are those going on now. The great problems that touch us most are those of the present. Yet it is impossible to follow these intelligently, or even to read about them understandingly in the newspapers, without some knowledge of their history. Nearly every important public question of today has its roots in the affairs of yesterday. Our present civilization in all its complexity is but a development from conditions that grew up in the past. Who can understand without some knowledge of history the negro question in the South, or the Monroe Doctrine, or the Irish question, or the doctrine of State Rights?

4. *Other answers.*

The three reasons that have just been given for the study of history are only examples of the many that may be given. Every teacher can easily add to the list, and so can the pupils as they grow familiar with the study itself. It will be found an interesting and profitable exercise, especially at the close of well rounded periods, for the teacher and the class to cooperate in making a list of the useful things that have been learned and the practical benefits that have been derived from the work up to that point.

If a knowledge of history be useful, the next question that naturally arises is:

HOW SHOULD IT BE TAUGHT?

This is not an easy question to answer. Indeed the answer will vary with the personality of the teacher and of the pupil. One teacher can use successfully a method that fails in the hands of another; and every one knows that plans that work well with one class sometimes fail dismally with another. We can only make a few suggestions.

1. *Too much should not be attempted.*

The great difficulty in History, especially to a beginner, is its complexity. The teacher should remember this and try to keep the work simple and clear. Many things are put in the book only to serve as a background for the really important things. These should be kept in their place and not brought

forward to confuse the pupil's mind and burden his memory. It should be understood from the first that a high school course can teach only the essentials. If this is done, the students will get a clear outline, which can be filled in later in life, as opportunity arises. Otherwise they will get only a confused jumble of disconnected details, and an overwhelming distaste for history that future reading can scarcely overcome.

2. *Progress is helped by grouping things.*

The important things should be learned first. Whatever smaller things are necessary can be grouped about them. Many names and events that are too small to be remembered alone can be so associated with other greater ones, that when mentioned afterwards they are easily located and identified and can be found promptly for further study if the occasion arises. In this way the pupil acquires control over a mass of information that he can not carry in his memory.

3. *Comparison helps the perception and the memory.*

The characteristics of nations are best brought out in this way. Athens and Sparta are understood more easily when they are contrasted. Their struggle may later be compared with that of Rome and Carthage. The same process may be applied to the great men of history, as was done so admirably by Plutarch. Caesar recalls Alexander, Cicero, Demosthenes. The application becomes still more absorbing when ancient and modern men are brought together, as Napoleon and Caesar, Louis XIV and Pericles. In the same manner great movements grow clearer by contrast, as the crusades and the Mohammedan invasion of the West. This method not only gives a better understanding of the things compared, but it fastens both in the memory, and keeps the student from forgetting today what he learned yesterday.

4. *Certain practical points should be kept in mind.*

The teacher should bear in mind the age and experience of the students. He can not require such intensive study of the subject from first year pupils as he can from those in their fourth year.

He should not let the pupils feel that the lesson is a mere routine of so many pages. They must be made to see that each

lesson contains an account of certain specific things, which are to be understood rather than memorized.

When assigning a new lesson, the teacher must know definitely what it contains, and should take the time to tell the class in advance what to do with it and how to do it.

When several lessons have been required to complete the study of a movement, it is well, before passing from it, to review it as a whole, so that the students may learn in a connected way what the movement means, its causes, its incidents, and its results.

The study of history should be constantly accompanied by the study of the geography involved. This will explain as nothing else can the reason for many events. Locating a place on a map makes the incident connected with it seem more real and serves to fix it in the mind. Outline maps are very useful for this purpose and can be obtained from almost any large publisher of school books.

No great amount of outside reading can be done by high school classes, but some opportunity ought to be offered to those pupils who have the time for it and the ambition to do it. The books chosen should be easy reading and simple. To give a boy who is just getting a taste for such reading a hard and puzzling book is to destroy what might otherwise become a useful habit. It is often wise to have several copies of one good book, rather than other books not so well adapted to the special need.

The study of recent, even of current history should be encouraged. To the beginner its usefulness is most obvious and its appeal is therefore greater. It is in immediate contact with the pupil's daily life and there are a thousand ways by which it may be made interesting.

The history teacher may often make an alliance with the teacher of English, so that English themes may be written on historical topics, thus combining their armies against the forces if ignorance.

The number of dates required should be reduced to a minimum. One good date, well chosen and occupying on the page of history a strategic position, will fix with sufficient definiteness the time of many events. A dozen dates ought to be enough for the history of our own country, a like number for the history of England. Possibly double that number would

do for the General History of Europe. It is a fascinating occupation to pick out the best ones. A contest might be started in the class to determine the best ones for any given country or period.

To the beginner the strange names in the history of a foreign country present great difficulty. It is a good plan to require only the most important, and to pronounce these over in advance and again and again during the recitation. They might be written day by day on a large piece of paper and put in a conspicuous place on the wall. Every day they can be hurriedly reviewed, some question being asked about each.

Many teachers of history find it helpful to exchange ideas with others who are working in the same field. To facilitate this exchange the Alabama Association of History Teachers was organized last spring in Birmingham as a branch of the Alabama Educational Association. Membership in it is at present free, and all teachers of history in our State are requested to send their names and addresses either to its President, Dr. George Petrie, at Auburn, or to its Secretary, Professor D. G. Chase, at the Birmingham High School. In this way they will receive whatever circulars the association may send out from time to time.

Other suggestions can be made most conveniently under the head of each year's work.

GENERAL HISTORY—FIRST YEAR

The teacher should remember that, in spite of the work done in the lower grades, this is really the pupil's introduction to a more serious study of history. To him it often seems very new and big and strange. It is no time for just "hearing the lesson," but a time for earnest cooperation, a time for finding out what difficulties each pupil is having and for helping him overcome them. The teacher must interpret history in terms that the pupil will understand, and at the same time lead him gradually to view things from the new historical standpoint. The conception of things that happen about him as an orderly growth out of the past is a novel one to him, and can not be acquired without patience and help. Success in this depends more on the teacher than on the pupil.

It is often well to spend a day or two talking informally to the class in a very simple way about the main divisions of

General History, showing on a map where a few of the most important countries are, as one would do for a party of young people whom he was about to take for a trip abroad. Five minutes a day at the beginning of the recitation might be well given to this map drill for two or three weeks. It will soon become interesting, if done in a spirited manner, and will lay the geographical foundation for the whole course. Then proceed to

I. *Ancient History.*

Here again the same process should be repeated. The main divisions should be pointed out, and the countries involved studied on the map, with a daily review of the names of important places, of the striking physical features, and the relation of one country to another, never relying on the student's memory, but constantly reinforcing it by review. The purpose of the recitation is not to torture out of his mind the few things he may have stored there, but to put something new in it every day and to fasten in it what is growing dim and uncertain.

1. *The Oriental Countries* often seem especially hard to the young student. This is sometimes because the teacher insists on too many things being memorized. Very little attention should be paid to the names of men, or to the precise dates of events. The only importance of the dates in this period is to give some idea of the remoteness of beginnings and of the order in which a few of the great events occurred. Emphasis should be laid on the distinguishing features of life and society in the different countries and on the contribution of each to our civilization and its influence on other nations. So far as possible the teacher should show clearly and often that Assyria, Babylonia, Phoenicia, and Egypt are not entirely separate nations, but parts of the whole stream of history, each in turn influencing its current. The importance of the Nile valley should be pointed out and its peculiar influence on Egyptian history. In like manner the effect of the Tigris-Euphrates valley should be kept in mind when studying the history of Assyria and Babylon. And the influence of the Oriental nations on Greece and Rome can be understood only when one realizes that the Mediterranean sea was a great highway for commerce and other intercourse.

The method of comparison can be used to advantage to bring out the peculiarities of these nations and countries, as, for example, Assyria may be compared with Babylon as to its location, its extent, its duration, its government, its art, its religion. The Hebrews may be compared with their neighbors, the Phoenicians, as to their antiquity, their religion, their government, their commerce, their influence on our civilization.

At some time during the study of these ancient nations the teacher should make clear how it is that we have a record of these times at all, and how we are able to interpret their inscriptions. A stimulating account can be given of the work of excavation that has been carried on in these countries in recent years and of the men who have done most in it.

2. The history of *Greece* should also be begun by an informal talk with a map at hand. In this the teacher should point out very simply the course of this history, omitting all details and calling attention only to the half-a-dozen big movements. Sparta, Athens, Thebes, Macedonia, the Aegean Isles, the Greek countries in Asia Minor must all be clearly located. Every day these locations should be briefly reviewed and some new point added. The influence of geography should be pointed out, and it can be driven home by a comparison of Greece and Egypt. No other countries show this influence so beautifully. It can be, and should be, traced at every step.

The development of Athens and of Sparta should be traced, contrasting them so as to bring out the fact that they were two distinct types. Later their similar features should be pointed out, so that they may appear also as common members of the Greek race.

The greatest emphasis should be placed on the history of Athens. To us Greece means Athens. Every effort should be made to show the modernness of life there. Its literature, its art, its democratic ideas and government should be dwelt on at length. The teacher should also point out the difference between Athenian democracy and modern democracy, tracing the development of this government, and the cause of its downfall.

The fact should be insisted on that Greece remained a collection of city-governments. Its internal history is a constant struggle on the part of Sparta, Athens, and Thebes for leadership. An effort should be made to explain the reasons for this.

and to show that it resulted in the conquest of Greece proper by Macedonia, and later in the subjection of both to Rome.

The relation of Greece to the eastern nations should be constantly followed during the early period, during the Persian wars, during the war between Athens and Sparta, during the marvelous career of Alexander the Great. On the other hand its influence on Rome is equally important.

The deeds of Alexander afford an excellent opportunity to review from time to time points in the history of the East. His achievements should be studied not merely as a thrilling conquest of the world, but also as a movement that spread Greek civilization and the Greek language over the Eastern lands, thus preparing the way for the spread of Christianity later on. A word may be said about the remarkable permanence of this Greek influence over the East, explaining that it kept that half of the later Roman empire permanently distinct from the Western or Roman half. On the other hand its limitations may be suggested by calling attention to the fact that when Alexander's empire broke up, the breaks came along the old lines of national cleavage.

A careful study should be made of chapter IV, of the textbook, so as to understand just what is meant by Greek civilization.

3. The history of *Rome* gives an opportunity to study the effect of geography less intensively than does the history of Greece, but far more extensively. Indeed its history covers step by step all the geography of the ancient world. It therefore reviews what we have already learned, and adds the rest gradually so that we may absorb it gradually. It is a story of conquest, the steps of which should be made perfectly familiar to the student: first, Italy, central, Northern, and Southern parts; then Carthage and the West; then Greece; then the East; finally the North. This conquest may well be contrasted with that of Alexander, as to its causes, its thoroughness, the time it took, the results.

Behind all this military phase, the internal struggles of the Roman people must be followed in broad outline. They are too intricate for the school boy to understand fully. But he can be taught to trace the rise of the Plebeians and the development of a great mass of dissatisfied poor who gave an opportunity to so many ambitious leaders and an insoluble problem

to so many puzzled statesmen. The attempt to draw the line between these two kinds of public men at Rome will afford an unfailing source of lively debate and may be made to lead to outside reading in a natural manner.

The rise and nature of the empire should be carefully studied. Many boys will be interested by a comparison of the problems of that day with our own, especially of those that touch on foreign dominions, class distinctions, and the concentration of wealth.

The history of the empire is far more difficult than is usually supposed. To view it as little more than a series of biographies of good and bad emperors is a farce. A few of them did mark epochs in its development, as for example, Augustus its founder, Constantine under whom it became officially Christianized, Diocletian under whom the natural division into East and West was formally recognized, and Justinian who in many ways revived its glory. Yet behind the scenes went on other movements of real importance also, the development of the Roman system of governing the world, the growth of international law with its codes, the equally important growth of international trade and its magnificent roads, the much explained decay of the Roman vigor, the penetration of the Germans into many fields of Roman service, until the Roman world gradually became a Germanized world. These are all deep topics. They can not be entirely ignored, but they must be touched lightly and as simply as possible. The teacher may well remember that often a young person finds the easiest approach to a difficult idea by means of a concrete incident, or through some dramatic situation, or by a picture. The Biblical accounts of Pilate and Felix and Cicero's denunciation of Verres give great vividness to certain phases of Roman provincial government, and lead to questions about other phases of that very intricate problem. A photograph of a Roman aqueduct or a Roman road will do more to suggest the tremendous material power of the empire than all the books in the world.

II. *Medieval History.*

The teacher and the class who have safely made their way through ancient history need have no fear of the medieval period. This is true not because it is easier, but because the

difficulties are in the main the same and can be overcome by the same methods, and because the process is now less new and strange. Only a few suggestions are therefore necessary.

1. The period has no sharp beginning and no definite end. It begins with the gradual mixture of the primitive German civilization with the exhausted Roman. The so-called dark ages are the period during which this child and this old man hand in hand are groping their way toward a new order.

2. The institution about which this new order soon began to crystallize was feudalism. This should be studied carefully, as it is the dominant form of government during the middle ages.

3. The rise of nationalities must be watched, their location fixed and their progress and growth followed.

4. The crusades can hardly be overemphasized. Directly or indirectly they are connected with almost all that follows.

5. The revival of learning, the reformation in religious matters, and the revolution in political government that burst out first in France, all represent the same tendencies in different fields and their coming marks the passing of the middle ages.

III. *Modern History.*

While the difficulties met are in general the same as those already encountered in ancient and in medieval history and can be met in the same way, the following special points may be noted:

1. An increasing emphasis will naturally be laid on the results of events. More than in any previous period past occurrences will be seen to affect the world in which we now live. A special effort should be made to show the pupil how things about him today have grown out of what went before. Now is the time for him to acquire the historical standpoint, which regards everything as a growth or development.

2. Newspapers and magazines can now be used to stimulate an interest in the work. One of the most effective methods is to call attention to a news item in regard to an incident abroad, and then to ask for all the light that modern history can throw on the situation. Such problems may be assigned over night and the textbook may be used in the solution.

3. If possible, more time should be given to this period than to any other, because of its great practical importance.

4. In almost every community some one lives who has been abroad and who can be persuaded to talk about some city or country, or may be willing to be interviewed by the pupils.

ENGLISH HISTORY—SECOND YEAR

The study of English history should serve a three-fold purpose: first, to gain a knowledge of the development of England itself; second, to trace the connection of that development with the history of other countries in Europe; third, to lay the foundation for a study of our own country's history. In regard to each of these a word may be said.

I. *England's own history.*

No other country of Europe has a history that combines so many elements of interest and importance.

1. It is one of the longest. Therefore it gives time to trace the full working of cause and effect and the gradual development of institutions.

2. It has during a long period been free from invasion and conquest. Therefore its people have been able to work out their own problems undisturbed by forcible interference from abroad.

3. The English nation has shown a genius for government at least unequalled since the fall of Rome and a love of freedom never before combined with it. These two talents have made its history the great field for the development of constitutional liberty.

4. The English have not only, like the Greeks, shown an original and creative genius and contributed largely to the civilization of the world; but they have also, like the Romans, shown their practical ability to build up a great and lasting nation and empire.

II. *England's relation to Europe.*

In spite of England's comparative safety from invasion and conquest, its history nevertheless is from time to time closely woven in with that of the continent. This relation must be carefully traced, and the process will afford an excellent opportunity to review the history of Europe. The following points should be noted:

1. Many movements in England are but local manifestaitons of general movements that swept over all Europe. This statement applies to the rise and fall of feudalism, the crusades, the revival of learning, the reformation, and the impulse toward discovery and colonization.

2. If possible the pupils should have access to several copies of the general history that they studied the previous year, and should be made to refer to them when studying these topics.

3. The point should be insisted on that England has not only been affected by general movements that touched all Europe, but has itself greatly affected the course of European history. This can be clearly shown in regard to wars, government, religion, literature, commerce, manufacturing exploration, settlement, and conquest.

4. No history of England is complete that does not trace the rise and spread of the wonderful, complex, and indescribable thing which, for want of a better word, we call the British Empire.

III. *England the Background for our own history.*

A fair knowledge of English history is absolutely essential as a preparation for the study of American history. This is true for many reasons. The following may be mentioned.

1. So closely is our colonial history connected with the progress of affairs in England that some writers prefer to treat it as a part of the history of that country rather than as an early chapter in our own. In fact it should be a part of both

2. Many of the fundamental ideas that have played so large a part in our development are really in origin English ideas, more or less modified to suit conditions here. These can not be properly understood without some knowledge of their rise and progress in the old country.

3. Time and again England has played a more or less conspicuous part in our history. This was true in the War of the Revolution, in the War of 1812, during the Napoleonic period, during the turmoil over Texas and Oregon, during the Civil War, and at other times that could be easily mentioned.

4. Now that we have acquired distant possessions and have become a world power, we are brought into more direct contact with the British Empire, and its history will be more important than ever to Americans who wish to understand its attitude on international questions.

AMERICAN HISTORY—THIRD YEAR

Every one who has taught the history of the United States in the seventh grade has realized that there are a great many things, important and interesting in themselves, that are beyond the comprehension of his pupils. Now is the time to teach many of those things. The high school course should not be a mere repetition of work done before. Of course what was done before may now be reviewed when the occasion arises, but it should be viewed from a broader standpoint, and fresh topics should be taken up. The pupil now has had two years of good training and the work of this year ought to be the best of his whole course. A few suggestions may help to make it so.

1. This year's work deals with things that concern him more closely and obviously than any that he has yet studied. Its usefulness should be made as clear as possible.

2. No one ought to finish his course in the history of his own country without getting a better idea of good citizenship and some stimulus toward public service.

3. For lack of time colonial and military history, which are usually studied with some fullness in the lower grades, should be given a subordinate place.

4. Emphasis should be laid on our constitutional development, so that the pupil may understand the structure of his country and how it came to be what it is. This is necessary if he would be an intelligent citizen, taking his share in public affairs.

5. Great emphasis should be laid on the industrial and economic side. We are now beginning to realize the tremendous effect that this side has had, and the importance of an understanding of it.

6. A constant attempt should be made to preserve an impartial attitude on disputed points. An historian should learn to present his own views without bitterness or unfairness toward those who differ from him.

7. In connection with textbook work some local research can usually be carried on to advantage. It gives variety, arouses an interest, and gives the pupils some idea of the way in which material for history is gathered.

LATIN

THE beginning book adopted by the State of Alabama is a most delightful book to teach. Our aim in this manual is to make a few suggestions to the young and inexperienced teacher of Latin.

PRONUNCIATION

Teach the *Roman Method* and *be sure that you understand it.* The pronunciation is fixed the first year and it is just as easy to get it right as wrong. Why not get it right? If you do not know it yourself, go to some one who does and get it or else do not try to teach Latin. An accurate pronunciation requires that long vowels be given twice the time given to short vowels, whether accented or not. It is easy to distinguish in quality between long and short vowels, especially as our adopted book marks the long vowels.

LONG VOWELS

Pupils should daily write out the declensions of nouns on the board and *mark* the *long vowels.*

Never let a pupil write an English sentence into Latin without marking the long vowels.

Continue this method with the declension of the adjective and the pronoun.

VOCABULARIES

How can a person learn a foreign language without knowing the meaning of the words in that language? Do you want to make Latin comparatively easy to your pupils? Well, then, there is but one way: Teach thoroughly each lesson before you enter the next succeeding one. Require your pupils not only to learn the vocabularies thoroughly, but in hearing the vocabulary do not always ask for the nominative case, but call for the accusative plural, accusative singular,—first one case

and then another; or, in other words, *drill, drill, drill.* The teacher who cannot stand the *drudgery* of *drill* and *daily* reviews ought to get out of the schoolroom.

DECLENSIONS

Never let a pupil get into the second declension before he knows instantly every case in the first. It is not sufficient to decline the word; he must know the case from the ending the minute he sees it. Master thoroughly the second declension before trying the third. The pupil who enters the third declension before he knows the second, soon becomes disgusted with Latin and in a few weeks drifts out of the class. The third declension is the hardest of all. The subject of *gender* is troublesome. Have your pupils make a list of all masculine, feminine and neuter nouns, three columns in a note book. Call upon one person to name all masculine nouns of the third declension, another the feminine, another the neuter, giving in each case the meaning. Continue this method with the fourth and fifth declensions.

CONJUGATIONS OF VERBS

What we have said about declensions applies equally to the conjugations. Never enter the second conjugation before your pupils know thoroughly the first. Require the indicative active first and do not think of the passive until your pupils know the active. It is not sufficient to inflect the tense. He must know all the endings of the tense the moment he sees them. If he has the third plural imperfect, call for the third plural of each tense. Whatever person and number the book has, make your pupils give that person and number of each tense. Require this of your pupils and demand that it be done in a few seconds, and you will be surprised at the result.

SYNTAX

Do not be satisfied to read the sentences, translating from Latin into English; but for the first year, parse every word requiring the case, gender and number of each noun, pronoun or adjective, as the case may be. Do not let your pupils recite

too slowly; for instance, *accusative case*,—a minute passes—*masculine gender*,—another minute—*plural number*. Why not say *accusative plural masculine*, in one breath? If you will train your pupils to think accurately and rapidly in the first few lessons, they will become so proficient that future lessons will become easy and they can tell the case, gender and number of a word in one second. If you wish to make Latin easy, use this formula: Give short lessons, give daily reviews, drill the forms into your pupils so that they will recognize a case on sight; never go into an advanced lesson without a thorough knowledge of all past lessons.

READING ALOUD

The teacher should train the ear to hear as well as the eye to see. Read aloud a Latin sentence and ask for a translation. This method forces the pupil to get his vocabularies thoroughly. Read the English aloud and call for the Latin. This method not only reviews vocabularies but it trains the ear to grasp the sentence as a whole, and when the pupil recites you know who is doing the work. Too many teachers require the lesson to be written and nothing further. The teacher who continues that method only will soon have a class with one or two doing the work and the rest copying it. Require your pupils to read aloud the Latin until each one is thoroughly familiar with the accent and pronunciation.

SUBJUNCTIVE MOOD

Do not get into this subjunctive too soon. Better take a review and be sure that your pupils cannot be caught on the indicative. Too many teachers rush over the first half of the book in order to get into the subjunctive. Better never get into the subjunctive than to get there without knowing the indicative in each conjugation. Impress upon your pupils that there are two uses of the subjunctive,—dependent and independent. Require your pupils to memorize the dependent uses and the tenes each takes, and the same with the independent uses. Drill your pupils daily on what tenses purpose, result, indirect questions, etc., take.

INDIRECT DISCOURSE

You can make indirect discourse quite easy if you will take a review as soon as the principles of indirect discourse are understood. When you take the review, change each sentence from the direct to the indirect form. Try this and watch the result.

GERUND AND GERUNDIVE

Impress on your pupils that a gerund is a neuter verbal noun used only in singular number, but the gerundive is a verbal adjective, declined like *bonus*. Be sure to teach your class to change from one to the other.

EDUCATIONAL VALUE OF LATIN

The educational value of Latin is well established and it has stood the test for centuries. Latin to most students is difficult. To get out of Latin the value that is in it, requires hard work and there is no use to attempt to disguise that fact. We do not believe that every boy in the high school should be forced to study Latin. The boy or girl who has no talent for languages, who has difficulty in memorizing vocabularies and paradigms, ought not to try Latin. Unless a teacher knows Latin and something of how to teach it, he is earnestly urged not to try it. Nine boys out of ten will love Latin if the teacher knows his business. Ambitious boys take great delight in mastering this difficult subject when they have confidence in the ability and the enthusiasm of the teacher. Too many are trying to teach this subject who know little about the facts of the language. If you feel any doubt as to your ability to teach the subject and to arouse enthusiasm in your classes, our advice to you is to go to some good summer school and come in contact with a real teacher of Latin.

CAESAR

The following are merely suggestions for the teacher. If he knows his Caesar well and is enthusiastic in his teaching, he will have his own method and can hardly fail of success. Although the first book of Caesar is the most difficult of all,

if the teacher will do his duty, the pupils will not find it tiresome to read successively through the first four books. While the linguistic side is vital at this time, it should not require so much of the pupil's attention that he will overlook the fact that he is reading a great political treatise and is not studying Caesar as a "drill-book" on syntax. Quality rather than quantity should be the chief aim.

During the first semester the progress should be slow and accurate. Emphasis should here be laid on the chief principles of syntax and there should be a constant review of the forms. No rapid progress can be made unless the work at this point is thorough. The aim should be to teach Latin so that the pupil will be able to read with ease and appreciate what he reads. He is a wise teacher who knows *what not to teach* in the second year. Remember that in the matter of syntax some points must be reserved for later years. The second year pupil is not expected to have that knowledge of the intricate points of syntax that a college graduate should have. Let the *main* points be taught and taught well.

CICERO

At least six orations of Cicero should be read, the four against Catiline, the one for the Manilian Law and that for the poet Archias. Syntax should still receive its share of attention. Pupils should be required to read the Latin aloud, giving the proper rhetorical emphasis. Sight readings from the selections at the end of Gunnison and Harley's Cicero should accompany the regular reading lessons. Put the pupil upon his own resources. Insist upon the very best English in translation. Nothing short of this should ever be tolerated. Incidentally, work should be given on Roman political institutions, superstitions and religion. Some few lessons might profitably be given on the subject of Ancient Oratory and particularly Roman Oratory. But always remember that these are not the *main things*.

We must learn to read with rapidity and to appreciate Cicero's orations as masterpieces. Prose composition should be given for at least one full period a week. A drill on forms and syntax might well accompany this. Much must be left to the wisdom of the teacher.

FRENCH

TWO units of French are offered as electives in schools employing four or more teachers. Its study is confined to the third and fourth year of the curriculum. Since the study of modern languages is still in its infancy in the high schools of the State much will depend on the teacher as to the place which French will occupy in a given school. If the teacher is well prepared for his work and if he is energetic and filled with enthusiasm he can win a large number of high school students to the study of French. French should be studied for the cultural value it possesses. It should be studied for the sake of the influence which it has exerted on the English language and literature. It is of great value as a preparation for intellectual pursuits that require ability to read French for information. It is indispensable for students of art and architecture, and every student of the sciences, agriculture, horticulture and floriculture should know French. In addition to its cultural and utilitarian value the study of French affords great pleasure, not only because of the beauty of the language but also because of the opportunity it affords to become familiar with French history, French literature, French life, manners and customs. To know the life and thought of a foreign nation helps us to appreciate our own excellencies and defects as a nation.

The chief obstacle to the efficient teaching of French in the high schools at present is the lack of sufficient number of properly prepared teachers. It can be safely assumed that many of our teachers of French have had at most the two or three years of French offered in our colleges. This training should be supplemented by a year or more of study in one of the larger universities or at least by summer courses in such institutions as Chicago, Columbia, etc. It is very desirable that the teacher of French should spend a summer in study and travel in France. The Alliance Francaise offers summer courses at Paris and at a number of the French universities, among others those at Grenoble, Caen, and Lille. The cost of a trip to France and return from Alabama need not exceed

$350 or $400. A summer thus spent will prove of great value to the American teacher of French. In fact the teacher who has not been in France will not be able to reach his highest point of efficiency.

If possible the French classes should have a room to themselves and this room should be furnished in a way that will give it a distinctly French atmosphere. It should be provided with wall maps, one showing the divisions of France into provinces and one showing the division into departments. It should contain the French flag, and pictures of great French authors, rulers, men of letters, scientists, artists, musicians, etc. Pictures and post cards showing scenes of Paris and other places of interest in France should be provided. These may be obtained at small cost through G. E. Stechert & Company, New York. The teacher's desk should be provided with a number of good books in English on French life and customs. Such books are published by many of our American publishers. Access to a few books of this kind will prove a stimulus to the students.

FIRST YEAR

The texts adopted for study in the first year of French are Fraser & Squair's "Shorter French Course" and Bacon's "Une Semaine a Paris." The first half-year should be devoted entirely to a careful study of the grammar, embracing thorough, constant instruction in pronunciation, vocabulary, idiomatic expressions, careful study of regular and irregular verbs, daily composition, daily translation in and out of class of exercises from French to English and English to French, drill on pronunciation aloud by concert and individually. The phonetic symbols contained in the "Shorter French Course" should be employed in teaching pronunciation. Too much attention can not be paid to the position of the tongue and lips in the formation of the French vowels. The oral exercises can be used to advantage. The student will not learn to speak French fluently but oral practice gives zest and interest to the study of the language. A thorough foundation in grammar should be acquired before much reading is attempted. "The Shorter French Course" furnishes ample reading material for the first term.

In the second half-year the student should continue the grammar, giving at least two recitations a week to the formal study of this subject. Constant reviews should be given. Oral practice and written composition should be continued. The remaining days of the week should be devoted to "Une Semaine à Paris." The teacher should provide himself with some good book on Paris in order to supplement the information contained in the text. Baedeker's Guide to Paris will be found suitable for this purpose. If "Une Semaine à Paris" does not contain sufficient reading material for the second term it should be supplemented by some simple book such as Lazare's "Les Plus Jolis Contes de Fées," or Joynes' "French Fairy Tales."

SECOND YEAR

Douay's "An Elementary French Reader" has been adopted for use in the second year. In addition to the reader instruction should be given one recitation a week in grammar, embracing more advanced composition than in first year. The reading text may be made a basis of composition. The teacher should also use the selections in the reader as a basis for oral practice and dictation exercises. It is very important that dictation exercises be given throughout the second year. The poems at the end of the reader should be memorized and the teacher should explain the difference between the French and English methods of versification. Informal talks on French literature and the history of France should be given occasionally.

GERMAN

THE study of German is confined to schools having four or more teachers. Two units are offered as electives in the third and fourth years of the high school curriculum. Since the study of German in the high schools of the State is still in its infancy the importance of this subject as a part of the curriculum will depend largely on the preparation of the teacher and his aptitude for the work. A well trained, live, energetic teacher will be able to win a fair proportion of high school students to the study of German. The first qualification of the teacher of German should be a sufficient knowledge of the subject to be able to teach it acceptably; and, too, he should be master of the best method of presenting the subject. The usual college course in German consisting of from one to three years is not sufficient preparation. Additional preparation should be had by a year or more of study at one of the larger universities, or at least summer courses such as are offered at Chicago, Columbia and other such institutions. If possible the prospective teacher of German should spend a summer in Germany getting a first-hand knowledge of the German people, their language, manners and customs, their large cities, historic and literary monuments, etc. Vacation courses for foreigners are offered at the University of Marburg and at several other German universities. A few weeks of study in one of these universities will be found of marvelous benefit to the American teacher of German. The cost of a summer in Germany from Alabama and return need not exceed $350 or $400. If the teacher desires to reach his highest point of efficiency in teaching German he will find it imperative to spend at least one summer in study and travel abroad.

It is highly desirable that German classes should have a separate room and that the room be furnished in such manner as to give a distinctly German atmosphere. The room should be provided with a large wall map of Germany, with the German flag, with pictures of the Great German authors, rulers, soldiers, scientists, composers, etc. Pictures and postcards representing places of interest in Germany should also be provided. Such things as mentioned above may be procured at

small cost through G. E. Stechert & Company, New York. German mottoes and proverbs can be artistically drawn by some bright student. The teacher's desk should be provided with a few good books in English on German life and customs such as Baker's "'Seen in Germany," Mrs. Sidgwick's "Home Life in Germany," "Dawson's "German Life in Town and Country," Wylie's "The Germans," and Schauffler's "Romantic Germany." These books may be obtained from their respective publishers or from G. E. Stechert & Company, New York.

The teacher should also provide himself with books which will be helpful in teaching. The following will be of service in the teaching of German: On pronunciation and phonetics: Grandgent's German and English Sounds (Ginn & Co., $0.50), Hempl's German Orthography and Phonology (Ginn & Co.), Vietor's German Pronunciation (Carl Schoenhor, Boston), Vietor-Ripmann's Elements of Phonetics, English, French and German (Dent, $1.00). German grammars for reference: Thomas's German Grammar (Holt) or Curme's A Grammar of the German Language (Macmillan). Dictionaries: Muret-Sander's (abridged edition), two volumes (German-English, English-German), cost about $2.00 for each volume; Flügel-Schmidt-Tanger's German-English and English-German dictionary (each part $2.00); Heyne's Deutsches Wörterbuch (Kleine Ausgabe, $3.25). Perhaps the best all-German dictionary. For recent German spelling reforms Duden's "Orthographisches Wörterbuch der Deutschen Sprache" will be found indispensable. Among the briefer histories of the literature published in English are those by Franeke, Priest, Hosmer and Robertson. A good history in German is Biese's "Deutsche Literaturgeschichte" (published at Munich in 1911). Any of these books may be obtained through G. E. Stechert & Company, New York. The teacher should also provide himself with Bagster-Collins' German in Secondary Schools (Columbia University Press), Bahlsen's Methods of Teaching Foreign Languages (Ginn), Report of the Committee of Twelve of the Modern Language Association of America (Heath), Breul's Teaching of Modern Foreign Languages in Our Secondary Schools (Cambridge, England). A small pamphlet recently published by the American Book Company will be found helpful: "A Letter to Teachers of German." This can be procured free of charge by addressing

the company. The history of Germany is well treated in Henderson's "A Short History of Germany" (Macmillan).

FIRST YEAR

The texts which have been adopted for study in the first year of German are Kayser & Monteser's "Foundations of German" and Kern's German Stories Retold." The "Foundations of German" has been prepared along the lines most approved for the study of German in America. It presents only the essentials of German grammar necessary to laying a good foundation in the language. The lessons are arranged in progressive order and should stimulate self-activity as well as develop "Sprachgefühl.' ' While the German-English and English-German exercises are intended primarily to illustrate grammatical forms and rules yet they can easily be made the bases of simple conversation. It is not presumed that the high school student in America will attain a fluent speaking knowledge of German, yet it has been clearly demonstrated that the ear and tongue are equally as good as the eye in procuring an accurate and ready knowledge of a foreign language. Conversation after all is only oral composition, and oral practice not only helps to fix the language in the mind but awakens the enthusiasm and interest of the student. Teachers who have not had the advantage of coming into contact with the spoken language will be surprised at the readiness with which they will be able to conduct simple conversational exercises if they will but turn their attention to it. Thorough preparation of the lesson beforehand will enable them to handle the exercises of each lesson in a conversational way.

Before taking up the lessons in the grammar the teacher should spend a few days on pronunciation and German script. The teacher who has had training in phonetics will be at a decided advantage in presenting the sounds of German vowels and consonants. The student should be shown at the outset that the position assumed by his tongue and lips in the pronunciation of English will have to be changed in order to secure the correct sound. At first it will require considerable gymnastic practice to give the right position of the tongue and lips in pronouncing the German vowels, but after a short while this difficulty can be overcome. A correct pronounciation should be insisted on from the outset as this is the first essen-

tial in acquiring a living language. Exercises in pronunciation should be given at every lesson through the course. The teacher should try to guard the student from falling into the monotone usually employed by students in reading in a foreign language. While there is a difference of opinion as to the value of teaching German script, it seems advisable that it should be taught, as it is employed throughout Germany generally. The script should be taught from the beginning. A few preliminary drills based on the examples in the first pages of the grammar will enable the student to write his exercises from the outset in the script.

One of the greatest difficulties to the American student in the study of German is gender. The only safe way to teach German gender is to require that the proper form of the definite article be learned with every noun. Instead of learning *Mann, Frau, Buch,* the studen should learn *der Mann, Die Frau, das Buch.* The vocabularies acompanying the lessons should be thoroughly learned before the exercises are undertaken and should be constantly reviewed. In order to learn the classification of nouns by declension the student should be required to give the principal parts of every new noun—that is, the nominative singular, the genitive singular, and the nominative plural. These can be fixed in the mind only by constant repetition. Especial attention should be paid to the strong and weak declension of adjectives. Before undertaking this topic in the book the teacher should spend a period illustrating and explaining the subject on the blackboard. This will save much confusion and many mistakes in subsequet lessons. In the study of the verb the teacher should explain the composition of the verb and insist that conjugation be learned by placing proper endings to the stem of the verb and not by mere memorizing of paradigms. The principal parts of strong, mixed and irregular verbs listed on pages 180-183 should be learned together with their meanings. In teaching the prepositions the teacher should not only insist that the lists of prepositions governing the various cases be memorized, but should call attention constantly to their use in sentences and idioms. First-year students will make many mistakes in word order. Every correction in word order should be carefully explained by the teacher or by some student in the class.

One great excellence of the grammar lies in the fact that each of the lessons has been kept within the bounds of a single

recitation. A whole lesson should be assigned every day for four days in the week and the fifth recitation should be given to review. At the end of each month a general review should be given. While it is desirable to begin the reading of regular selections as soon as possible it will perhaps be wise to defer this until after the completion of the fifty-six lesons which the grammar contains. Kern's "German Stories Retold" may then be taken up. The text should afford not only a basis for reading, but for simple conversation as well. The questions at the end of the volume will be found suitable for this purpose. After the questions have been answered orally in the class one or more students should be required to tell the story as a whole in German. The text should also be made the basis for constant grammatical review, and for dictation exercises. The principal parts of all nouns and verbs should be required, and daily drill in gender of nouns contained in the reading selection should be given. After the completion of "German Stories Retold" the balance of the year should be spent on the reading selections and grammar review contained in Appendix I of the grammar.

SECOND YEAR

In the second year of German the text adopted is Lutz's "An Elementary German Reader." Daily grammatical review based on the text should accompany each selection read and the contents of Appendix II of the grammar should be interwoven. All of the selections in part one of the reader lend themselves admirably to conversational practice and retelling. The teacher will find it profitable to have the student re-write these stories in German, boiling the text down to a given number of words. By using the text as a guide the student will find this an easy and interesting exercise. In part two before assigning a new lesson the teacher should read the poems aloud in order to give the student an idea of the beauty and rythm of German lyric poetry. The student should be encouraged to read them aloud for himself and should be required to memorize the following poems: "Du bist wie eine Blume," "Vergissmeinnicht," "Hoffnung," "Reiters Morgengesang," "Lorelei," "Erlkönig," "Des Deutschen Vaterland," and "Die Wacht am Rhein." The reader should be completed by the end of the second year.

VOCATIONAL ACCOUNTS

FOR a course of two periods a week, one year, the test, Principles of Bookkeeping and Farm Accounts, should be adequate, though it may require a little more time to complete the necessary drill work on the principles of bookkeeping and give the students a thorough mastery of their application to farm accounts.

The course should qualify a student (a) to keep a simple set of books in any mercantile business, (b) to assist in handling an elaborate set in a large business, and (c) to keep an accurate account of all transactions in connection with the business of farming. The last is by far the most important. The first and second results, however, are valuable to any boy or girl and are acquired with no additional expenditure of time, since the basic principles of bookkeeping must be understood before even a simple farm set of books can be kept and understood.

PART I

This part of the course covers 35 lessons in the test and is designed to lay a thorough foundation for the special study of farm accounts in Part II. If additional drills on principles is required for all or a part of any class, other similar exercises can be mimeographed for class use as they are needed.

Some oral work should form a part of every recitation. Review questions are given frequently, but they are merely suggestive. A student who can stand on his feet and talk about the principles he has studied is quite sure to understand them. Writing up sets alone will not suffice. The student must be taught to think, not merely to follow directions.

Original work should be encouraged whenever possible. Lose no opportunity to connect up what you are teaching with actual practice.

In Part I the lessons are purposely short, as thoroughness is of first importance and frequent reviews are valuable. In Part II short lessons are not practicable in the arrangement of

the subject matter, and the teacher must guard against too rapid progress at the expense of thoroughness.

Business writing should be emphasized in this part of the course. Excellent models are found on almost every page of the test. Small writing is essential in keeping any columnar set of books and some special practice on figures is important. Note the approved forms used in the test.

The numbers of paragraphs are intended for careful study and students should not be permitted to proceed to a new lesson until all subject matter is learned.

Some time can be spent profitably in copying the models presented in the text.

PART II

In this part of the course the principles of bookkeeping are applied to the keeping of farm accounts. Emphasize the difference between data records and permanent records. For example, a labor record blank like the one illustrated on page 146, may be ruled and kept on a shingle in the barn so that the farm hands may easily record their time each day. These data sheets will be made the basis of permanent cost accounts that can be prepared periodically. Feed record sheets are also data records that should be accurately, even if roughly, kept.

Farm Set I includes a complete series of transactions for a comparatively simple farm business, such as may be handled by an individual with the help of the family and employees.

The importance of the "Farm Plot" is taught and the method of using this data sheet is thoroughly presented.

The annual inventory method of ascertaining profits for the year is shown and a simple but effective set of books is introduced. The larger benefits to be derived from the latter method are easily understood.

Simple farm accounts with persons are important and must be emphasized. Farm Set II is a more elaborate treatment of farm accounts in which a partnership business is studied.

Give much attention to inventory work inasmuch as it is the basis of much of the statement work in any system of accounts.

Drill on farm plot work until its significance is fully understood, and make the work original whenever it is possible.

Farm business is essentially a cash business, and a modified form of cashbook is the principal original entry-book.

Study valuation and depreciation of property thoroughly.

Cost accounts, in addition to the regular form accounts, are essential and, for purposes of comparison from year to year, should be kept with great care. Be sure that all students understand their importance and relation to the other records of the business. Show that it is not enough to show how much net profit results from the year's business, but that the source of all losses and gains must be known for future guidance.

PART III

For those who may need to know how to apply their knowledge of the principles of bookkeeping to the keeping of a mercantile set, one special set of this character should be carefully covered. Through this set the most common original entry-books can be taught.

Some home work should be required of the class every day. Neatness and accuracy must be insisted upon in all written work. The printed blanks should be used especially where a limited amount of time is devoted to the subject. Some original forms may be ruled in connection with supplementary exercises.

ECONOMICS

THE object of a course in economics in a county high school is not so much to make technical political economists as to prepare future heads of families to apply the principles of fundamental economics to the affairs of daily life, in this case, particularly to daily life on the farm. True, these fundamentals are the same in every vocation, but this course is directed more to the making of thrifty mothers and fathers than thrifty bankers, merchants, brokers, etc. The essentials of any science are invariable, but they may be presented from various angles and for various purposes; and it is hoped that the principles of this subject may be so presented and applied as to render life on the farm more pleasant and profitable.

The chief divisions of economics are the *production, exchange,* and *distribution of wealth.* All others are subordinate to and are involved in these three; hence, effort should be centered upon them, that they may be clearly and firmly fixed in the student's mind. Farmers as a class are chiefly concerned with producing wealth, but ignorance of the process of its proper exchange and distribution subject them to exploitation by those who are willing to take advantage of such ignorance. Therefore, along with land, labor, capital, tools, machinery, division and co-operation of labor, and other agencies of production, the makers of wealth should understand the general principles of money, value and price, banking, taxation, wages, profits, interest, transportation, conservation, marketing, etc.

The book selected as a text seems to be well adapted to its purpose, but, like most books dealing with technical subjects, it has its shortcomings. For instance, in Chapter I, Part I, such technical terms as *wealth, counters, capital,* and *money* occur, whereas their economic definitions are placed further on. This difficulty is unavoidable, since everything that is important in a book cannot come first. The teacher's chief function is to assist the pupil in overcoming such difficulties. Let

him precede, point out the trouble, and give such directions as may be necessary.

The book consists of 355 pages and is to be completed in 18 weeks. The recitation schedule provides 3 lessons per week, or a total of 54 lessons. Allowing 12 lessons for a review of the book, and 4 for unforseen interferences, it will be found that the regular lessons must average about 10 pages. Each chapter of the text is preceded by an outline and followed by a list of topics for class discussion. It is suggested that the recitation quiz be based upon the outline, and that at least one of the most practical topics for discussion be assigned beforehand for a written exercise to be examined by the teacher at his leisure. Occasionally this written work should be replaced by a debate, with the class divided and given sides. Whenever practicable, let the topics for either the written exercises or the debate be chosen from the home life of the pupils.

Another suggestion is that the school select one phase of community life that is of economic value, make an exhaustive study of it, apply to it the economic principles involved and use it as an object lesson to the people of the community. To illustrate, one school might demonstrate the feasibility and profit of a cooperative creamery; another, a cooperative cannery; another, a community exchange for cooperative selling and buying; and still another, a machinery exchange for the benefit of such individuals as cannot afford the expense alone. In this way the schools are teaching the people to apply the principles of division and cooperation of labor in the most practical and profitable way. Not only so, but they are demonstrating their own value to the community and the value and practicability of community organization.

If these results are accomplished (and there are no good reasons why they should not be), the incorporation of this subject in the high school course will be fully justified.

MECHANICAL DRAWING

Texts:

First Semester—Educational and Industrial Drawing—Thompson—Mechanical Series, Book No. 1.

Second Semester—Ditto—Book No. 2.

Materials:

The course as outlined may well be carried out with but little equipment. As your author states, "A pair of pen—or pencil—compasses, a ruler, a hard pencil and paper, are all that are absolutely necessary." Those who cannot afford to purchase more, and those who are not inclined to do so at first, can get something from the course as outlined in the texts with the above materials. However, if the course is to be made a real mechanical drawing course, and results secured in keeping with other schools giving standard courses, more than the above will be necessary.

As mechanical drawing instruments are comparatively expensive, the principal and instructor will be expected to use good judgment in the matter of requiring these to be purchased. If a few pupils, however, be led to voluntarily get good instruments and supplies, the matter will become contagious and within a few years the mechanical drawing course in the county high schools can be put on such a basis that the purchasing of proper supplies may be required of all pupils. However, we must go slowly at first and act very tactfully in the beginning. This will come from growth, rather than set rules.

The following is suggested as ample for any high school course, and may be gradually introduced by the more willing pupils. The difficulty would be lessened if the school could own the instruments, drawing boards, T-Squares, scales and triangles, holding the pupils to whom they are leased responsible for the proper care of them during the year. In this way the pupils would be put to the expense of only paper, ink, and other perishable supplies.

1 set of Instruments'* including:

(a) A Ruling Pen.

(b) Pair Dividers.
(c) Compass, with pen and pencil attachment.
(d) Bow Pen, Bow Pencil, Bow Dividers (optional)
1 Drawing Board, 18 in. x 24 in., soft wood (may be made by Manual Training pupils).
1 T-Square, 24-inch (may be made as above).
1 30 x 60 Degree Triangle.
1 45 Degree Triangle.
1 Architect's Triangular Scale.
1 Bottle India Ink (waterproof).
1 4H Drawing Pencil.
½ dozen Thumb Tacks.
1 Soft Eraser.

Drawing Paper:

Any good drawing paper will suffice if it is thick enough to withstand erasures. What is known as "Detail Paper" is recommended for general use. It is buff in color, comes in the roll, can be bought by the yard as needed, and may be had from any dealer of architects' and engineers' supplies.

It is recommended that one or two plates during the year be made on regular drawing paper, designated as Whatman's Hot Pressed Drawing Paper. This comes in sheets of various sizes; Demy size is convenient for handling and for use.

Plates:

Some definite size should be decided upon by the instructor, and pupils should be required to submit plates of this size—exact measurements. Drawings should not extend to the edges of the paper, but for the sake of neatness, a margin of ¾ inch or 1 inch should be left on each plate. The marginal line should be drawn on the plate in the beginning, and the drawings spaced accordingly. A convenient size for the plates of the first semester is 9 in. x 12 in., and for the second semester, 12 in. x 15 in. Four, or more, drawings may be put on each plate.

*Note:—Complete sets of the above in neat leather cases may be had from dealers in architects' and engineers' supplies. The following makes are suggested for high school use: Eugene Dietzgen set No. 1188, $2.25; Keuffel & Esser set No. 9525½, $2.50; Three Bow set of either Weber or Post, $2.50. One Bow sets are much cheaper and will suffice for ordinary work.

The drawings should be carefully made in pencil, accurately drawn, measurements exact, erasures made, and then inked over the pencil lines. Common writing ink should never be used in ruling pens. After inked in, the plates should be cleaned of all pencil lines and finger prints, properly trimmed, and submitted by the pupil to the instructor for approval.

Neatness and Accuracy.

It is far better to have a few plates well done, as models of neatness and accuracy, than to have many done in a careless way. The instructor should see to it that all plates are carefully preserved until the end of the semester. By so doing, it encourages neatness, system and order and besides gives available material for exhibit work at any time.

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Poor lettering often makes an otherwise good plate useless. On the other hand, good lettering often makes a poor plate acceptable. Much drill should be given on the details of lettering for each problem. It should first be done on practice paper, and then put on the finished plate. The statement of the problem, as given in *italics* in the text, should be carefully printed under, or adjacent to, each drawing. Guide lines to limit the height of both capitals and lower case letters, should be made lightly in pencil, and afterwards erased. Guide lines in pencil should also be used to keep the proper slant of letters, using the 60 degree triangle. The letters should be put in with pencil first, and afterwards inked in with common writing pen and India ink. A copy of a simple, well rendered alphabet should be kept on the blackboard in plain sight of the pupils at all times.

Blue Prints and Tracings:

During the second semester of the mechanical drawing work pupils should be allowed to make a tracing from one, or more, of their best plates, and make blue prints therefrom. By having all pupils get ready for this at the same time, a roll of blue print paper may be ordered from your nearest supply house, and utilized without waste. If, however, the roll is kept in the dark, there need be no haste in using it. A roll, 30 inches wide and 10 yards long, will cost about sixty cents. A high priced printing frame is not essential, as the prints may

be readily made by holding the tracing and blue print paper tightly between a soft cloth and a piece of glass on a board or other flat surface.

Amount of Work:

There should be no difficulty in covering the amount of work in the texts. It is not essential, however, to have pupils execute all the so-called applications, designated in the texts by the letters, A, B, C, D, etc. It is recommended that the instructor give supplementary problems involving applications in common things of farm and home use. Working drawings of manual training projects can be used to good advantage.

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MANUAL TRAINING

MANUAL training in the county high school should possess two features—the educational and the practical: the training of the eye and hand and the construction of articles of use. While all objects made by the several classes should possess some practical value when finished, the most important feature is the educational one and should be kept in mind at all times. It is not the purpose of this work to train pupils simply to make articles, although these may possess intrinsic value.

The arranging of the exercises should be primarily for the education derived from them, but many can be used for broader purposes than the mere training of the hand and eye. For instance, in the construction of a road drag by a manual training class, the hand training is secured in the first instance, and the article when finished has some intrinsic value, but the use of the road drag for the development of good roads is of far broader and deeper significance. While it is not possible to have a new feature entirely in every article that is made, repetition should be avoided when possible. A great many supplementary exercises, however, should be used for the purpose of furthering the skill of the pupils and broadening the work of the class.

Manual training is correlated with drawing, and the pupil should be required to make sketches of his work. Where the teacher finds it desirable for the purpose of supplementing the text, the pupil should make full drawings of the exercises.

Before beginning any exercise a clear concept of it must be obtained and the pupil should be required to show that he possesses a complete understanding of the work.

While some time may be required for pure exercise work, that is, the performing of operations on some object which is of no special value, it should be limited, and almost immediately the exercises should be those which will be applied to some practical use. From the beginning the aim of the manual training work should be to make some useful article. When possible the preference of the pupil as to what he should make should be considered, provided he has a clear conception of it

Farm business is essentially a cash business, and a modified form of cashbook is the principal original entry-book.

Study valuation and depreciation of property thoroughly.

Cost accounts, in addition to the regular form accounts, are essential and, for purposes of comparison from year to year, should be kept with great care. Be sure that all students understand their importance and relation to the other records of the business. Show that it is not enough to show how much net profit results from the year's business, but that the source of all losses and gains must be known for future guidance.

PART III

For those who may need to know how to apply their knowledge of the principles of bookkeeping to the keeping of a mercantile set, one special set of this character should be carefully covered. Through this set the most common original entry-books can be taught.

Some home work should be required of the class every day. Neatness and accuracy must be insisted upon in all written work. The printed blanks should be used especially where a limited amount of time is devoted to the subject. Some original forms may be ruled in connection with supplementary exercises.

ECONOMICS

THE object of a course in economics in a county high school is not so much to make technical political economists as to prepare future heads of families to apply the principles of fundamental economics to the affairs of daily life, in this case, particularly to daily life on the farm. True, these fundamentals are the same in every vocation, but this course is directed more to the making of thrifty mothers and fathers than thrifty bankers, merchants, brokers, etc. The essentials of any science are invariable, but they may be presented from various angles and for various purposes; and it is hoped that the principles of this subject may be so presented and applied as to render life on the farm more pleasant and profitable.

The chief divisions of economics are the *production, exchange*, and *distribution of wealth*. All others are subordinate to and are involved in these three; hence, effort should be centered upon them, that they may be clearly and firmly fixed in the student's mind. Farmers as a class are chiefly concerned with producing wealth, but ignorance of the process of its proper exchange and distribution subject them to exploitation by those who are willing to take advantage of such ignorance. Therefore, along with land, labor, capital, tools, machinery, division and co-operation of labor, and other agencies of production, the makers of wealth should understand the general principles of money, value and price, banking, taxation, wages, profits, interest, transportation, conservation, marketing, etc.

The book selected as a text seems to be well adapted to its purpose, but, like most books dealing with technical subjects, it has its shortcomings. For instance, in Chapter I, Part I, such technical terms as *wealth, counters, capital,* and *money* occur, whereas their economic definitions are placed further on. This difficulty is unavoidable, since everything that is important in a book cannot come first. The teacher's chief function is to assist the pupil in overcoming such difficulties. Let

him precede, point out the trouble, and give such directions as may be necessary.

The book consists of 355 pages and is to be completed in 18 weeks. The recitation schedule provides 3 lessons per week, or a total of 54 lessons. Allowing 12 lessons for a review of the book, and 4 for unforseen interferences, it will be found that the regular lessons must average about 10 pages. Each chapter of the text is preceded by an outline and followed by a list of topics for class discussion. It is suggested that the recitation quiz be based upon the outline, and that at least one of the most practical topics for discussion be assigned beforehand for a written exercise to be examined by the teacher at his leisure. Occasionally this written work should be replaced by a debate, with the class divided and given sides. Whenever practicable, let the topics for either the written exercises or the debate be chosen from the home life of the pupils.

Another suggestion is that the school select one phase of community life that is of economic value, make an exhaustive study of it, apply to it the economic principles involved and use it as an object lesson to the people of the community. To illustrate, one school might demonstrate the feasibility and profit of a cooperative creamery; another, a cooperative cannery; another, a community exchange for cooperative selling and buying; and still another, a machinery exchange for the benefit of such individuals as cannot afford the expense alone. In this way the schools are teaching the people to apply the principles of division and cooperation of labor in the most practical and profitable way. Not only so, but they are demonstrating their own value to the community and the value and practicability of community organization.

If these results are accomplished (and there are no good reasons why they should not be), the incorporation of this subject in the high school course will be fully justified.

MECHANICAL DRAWING

Texts:

First Semester—Educational and Industrial Drawing—Thompson—Mechanical Series, Book No. 1.

Second Semester—Ditto—Book No. 2.

Materials:

The course as outlined may well be carried out with but little equipment. As your author states, "A pair of pen—or pencil—compasses, a ruler, a hard pencil and paper, are all that are absolutely necessary." Those who cannot afford to purchase more, and those who are not inclined to do so at first, can get something from the course as outlined in the texts with the above materials. However, if the course is to be made a real mechanical drawing course, and results secured in keeping with other schools giving standard courses, more than the above will be necessary.

As mechanical drawing instruments are comparatively expensive, the principal and instructor will be expected to use good judgment in the matter of requiring these to be purchased. If a few pupils, however, be led to voluntarily get good instruments and supplies, the matter will become contagious and within a few years the mechanical drawing course in the county high schools can be put on such a basis that the purchasing of proper supplies may be required of all pupils. However, we must go slowly at first and act very tactfully in the beginning. This will come from growth, rather than set rules.

The following is suggested as ample for any high school course, and may be gradually introduced by the more willing pupils. The difficulty would be lessened if the school could own the instruments, drawing boards, T-Squares, scales and triangles, holding the pupils to whom they are leased responsible for the proper care of them during the year. In this way the pupils would be put to the expense of only paper, ink, and other perishable supplies.

1 set of Instruments'* including:

(a) A Ruling Pen.

(b) Pair Dividers.
(c) Compass, with pen and pencil attachment.
(d) Bow Pen, Bow Pencil, Bow Dividers (optional)
1 Drawing Board, 18 in. x 24 in., soft wood (may be made by Manual Training pupils).
1 T-Square, 24-inch (may be made as above).
1 30 x 60 Degree Triangle.
1 45 Degree Triangle.
1 Architect's Triangular Scale.
1 Bottle India Ink (waterproof).
1 4H Drawing Pencil.
½ dozen Thumb Tacks.
1 Soft Eraser.

Drawing Paper:

Any good drawing paper will suffice if it is thick enough to withstand erasures. What is known as "Detail Paper" is recommended for general use. It is buff in color, comes in the roll, can be bought by the yard as needed, and may be had from any dealer of architects' and engineers' supplies.

It is recommended that one or two plates during the year be made on regular drawing paper, designated as Whatman's Hot Pressed Drawing Paper. This comes in sheets of various sizes; Demy size is convenient for handling and for use.

Plates:

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and the project is not beyond his ability to construct. The greater amount of the manual training work in the county high school should be in wood, as it is more readily obtained than any other material, and the finished articles can be better adapted to a useful purpose. Besides, woodwork requires fewer tools than some other forms of work. In all manual training work *quality* should be emphasized over quantity. Exactness, accuracy, thoroughness, and good workmanship are the ends to be sought by the teacher in the work of the pupil. These qualities are moral as well as industrial and react upon the character as well as upon workmanship.

Work benches can be erected by the class in Manual Training under the direction of the teacher at a very much lower cost than those on the market. *A work bench which will cost $10.50 can be constructed at a cost not exceeding $2.00. Benches thus made will serve the purpose and will stand wear and tear quite as well as any other work bench. Besides, this will afford some constructive work in carpentry which will be of a simple nature, giving the class some idea of construction and at the same time a considerable saving will be effected, which can be applied to other equipment.

OUTLINE OF COURSE

First Year:

Course I. Bench work in wood; construction of simple articles requiring few tools.

Course II. Advanced woodwork—continuation of Course I.

Second Year:

Course III. Projects for use in the home and on the farm.

Course IV. Projects in furniture construction; apparatus for illustrating laws of physics.

Third Year:

Course V. Cement-concrete work for the farm and home.

Course VI. Farm mechanics.

Course I includes simple articles of use, which will embrace the customary constructive joints. In this course bench accessories, as bench hook, tool rack, and mitre box should be first made by each pupil as these will assit the equipment of the

*Full plans and specifications together with complete instructions for making three styles of school work benches can be obtained without cost from the Department of Machine Design and Drawing, Alabama Polytechnic Institute, Auburn, Ala.

shop; later, such articles as broom holder, necktie rack, towel rack, book shelf, magazine rack, picture frame, taboret, blacking stand, handkerchief box, ironing board, coat hanger, etc.

Course II embraces advanced exercises of the same general nature, as porch swing, lawn benches, folding cot, playground apparatus for home and school, etc.

Course III includes useful articles for the farm and home, as stepladder, farm gate, wagon jack, split log road drag, plank road drag, harrow, terracing machine, farm level, model bridge, model roof truss, hotbed frame, corn harvesting machine, corn shocking machine, etc.

Course IV is in advanced furniture projects, as bookcase, library table, piano bench, plate rack, buffet, footstool, pedestal, hall tree, etc.; scientific apparatus for showing laws of physics, etc.

Course V. Concrete work for the farm and home is done by making molds for drainage tile, concrete fence posts, hitching posts, hog feeding troughs, watering troughs, concrete steps, lawn benches, flower pots, etc.

Course VI. Farm Mechanics. The construction of pieces for wagon repairs in wood and iron, fitting wagon wheel tires, making gate hooks, gate hinges, sharpening plows, horseshoeing, and other work in forge and metal work can be done in the county high school with small equipment.

OUTFIT OF TOOLS SUITABLE FOR MANUAL TRAINING IN COUNTY HIGH SCHOOLS

The following tools are divided into two sets, one set for the pupil, which is reduced to the minimum of tools required, and the other set for general use which is more complete and consists of tools used only occasionally by the pupil, designated as "Set of Tools for Shop." The outfit suggested is not intended to be followed in every csae, as many schools are able to purchase larger and more varied sets for both the pupil and the shop, but it is prepared to give assistance to those fitting out their manual training departments.

The set for the shop will suit all cases, but the pupil's set can be varied somewhat with the conditions of the periods and the finances of the department; for instance, one set may be divided among two or three pupils, as it is not likely that each pupil will need the same tool at the same time, but where possible, it is better to have more tools.

SET OF TOOLS FOR THE SHOP

14-in. Iron fore-plane—2-in. bit	$1.95
7-in. Iron block plane—knuckle joint	.35
Ratchet brace, 8-in. sweep	1.30
Screwdriver bit	.18
Expansion bit, 1-in. to 3-in.	.70
Set of bits, ¼-in., 5/16-in., ⅜-in., ½-in., ⅝-in., ¾-in., 1-in.	.55
Set of chisels: ¼-in.	.30
⅜-in.	.32
½-in.	.34
¾-in.	.38
1-in.	.42
1 Set of 7 gimlets	.25
1 Countersink	.15
1 Drawing Knife, 1½-in. plain handle	.80
1 24-in. rip saw, No. 6	1.70
1 12-in. back saw	.90
1 Framing square	.89
1 8-in. bevel	.21
1 Key hole saw	.23
1 6-in. Screwdriver	.15
1 Oil stone	.50
1 Pr. 8-in. compass	.19
1 Oil can	.10
	$12.86

SET OF TOOLS FOR THE PUPIL

9-in. Iron smooth-plane, 2-in. bit	$1.30
½-in. Chisel	.34
Marking gauge	.16
20-in. Hand saw, No. 10	1.60
12-oz. Hammer	.41
Tri-square, 8-in.	.34
Mallet	.15
	$4.30

TOOLS FURNISHED BY PUPIL

Pocket knife	$0.25
Two-foot rule	.10
	$0.35

HOME ECONOMICS

DOMESTIC SCIENCE

THE course in domestic science seeks to stimulate an interest in the home, giving to those who take it a higher ideal of home life, a respect for manual work, and raising home-making to the dignity of a profession, which it is, just as truly as is law or medicine. The subject is a broad one and should be handled in such a way as to stimulate thought. The following points should be stressed in the course:

1. The food principles and their function in the body.

2. The study of foodstuffs—their source, composition, food value, digestibility, and preparation. The effect of cooking processes on the substances in foods is the basis of principles underlying the cooking of foods.

3. The systems of digestion, elimination, and respiration should be thoroughly studied, as well as the processes of absorption and assimilation, aiming to show how foods are utilized and in what condition they should be supplied to nourish and build up the tissues.

4. Economy. Household expenses should be systematized. Thoughtful spending is encouraged when cost and value received are compared. Teach the girls how to make the simple, inexpensive foods attractive and nourishing and how to utilize leftovers.

5. Sanitation and hygiene, both personal and household. Although you may not be able to make the school kitchen a model as to convenient equipment and furnishings, it can be made a model in neatness and cleanliness. There is enough work incidental to the cooking to give considerable practice in actual housekeeping. Emphasis should be laid on having it done correctly and on having each class leave the room in perfect condition. The pupils should care for the equipment as much as possible and should feel a responsibility and pride in keeping everything clean and in order. Divide the work so that each has a definite share and each duty is taken in turn by the members of the class.

The lessons in the textbook are mapped out and planned with enough detail to need no further elaboration in this manual. They are so arranged as to give a foundation of facts and principles that may be applied to succeeding lessons and to work outside of school. The teacher may supplement the subject matter of the text by additional knowledge given as lectures or as reference readings. Additional recipes from other sources than the text may also be used.

It is suggested that the two periods a week given to the work be consecutive and be devoted to a double period lesson; the first part of the time to be given to theory and direction, the latter part—not less than 60 minutes—to be given to practice.

Let every fourth leson be a recitation or lecture. Little entertainments, luncheons, etc., given by the domestic science pupils, may serve as a means of enlisting the interest and cooperation of patrons and friends and also furnish funds to purchase needed equipment or helpful books. It also provides a way for the pupil to apply her newly gained knowledge to practical use.

REFERENCE BOOKS

A bibliography for student and teacher follows. All books relating to Domestic Science may be obtained from Whitcomb and Barrows, Huntington Chambers, Boston, who conduct a clearing house for domestic science literature.

1. Farmers' Bulletins, U. S. Dept. of Agriculture, Washington, D. C. These may be obtained free. Send for a catalog.
2. The Bureau of Chemistry, Department of Publications and other branches of the Department of Agriculture issue bulletins ranging in price from five cents to fifty cents. Send for catalog.
3. Bailey—Domestic Science, Principles and Application, Webb Publishing Co., St. Paul, Minn.
4. Kinne & Cooley—Foods and Household Management.
5. Williams & Fisher—Principles of the Theory and Practice of Cookery.
6. Library of Home Economics, twelve volumes, published by Maurice Le Bosquet. American School of Home Economics, Chicago, Ill.

7. Wiley—Foods and their Adulteration. Blakiston, Philadelphia, Pa.
8. Snyder—Human Foods, Macmillan.
9. Hutchinson—Foods and the Principles of Dietetics.
10. Harrington—Practical Hygiene.
11. Conn—Bacteria, Yeasts and Molds.
12. Prudden—Story of the Bacteria.
13. Prudden—Dust and Its Dangers.
14. Prudden—Drinking Water and Ice Supplies.
15. Carpenter—How the World is Fed.
16. Farmer—Boston Cooking School Cook Book.
17. Farmer—A New Book of Cookery.
18. Farmer—Diet for the Sick and Convalescent.
19. Richards—Sanitation in Daily Life.
20. Richards—Cost of Food.
21. Sherman—Chemistry of Food and Nutrition.
22. Weeks-Shaw—Text Book of Nursing.
23. Magazine—Journal of Home Economics. Benj. S. Andrews, Columbia University, New York.
24. Magazine—Good Housekeeping, Springfield, Mass.
25. Dr. Langworthy's Food Charts (splendid), U. S .Dept. of Agriculture, Dept. of Publications, Washington, D. C. Seventeen charts for $1.00.

EQUIPMENT FOR DOMESTIC SCIENCE

A domestic science equipment, to be adequate, must include all the necessary apparatus for the application of principles and actual cooking in the class room. If the equipment is too meager, the work is restricted and the girls do not learn the value of good utensils; if too elaborate, ingenuity is not developed and girls get extravagant ideas that are not practical or possible in the average home.

In selecting equipment, its wearing qualities and working possibilities must be considered. Often a simple, inexpensive tool will serve the purpose and last as long as a more expensive one. Then, again, it is better economy to pay more for an article known to be the best. *Experience in the class room is the best way to determine the best kinds of equipment to buy, and only those of experience ought to undertake the responsibility.*

Many complete lists of equipment are published, but most of them include unnecessary articles that may easily be omitted.

The cost of equipping a school depends on the number of students to be provided for, the kind and amount of equipment and the method of work.

The kind of equipment depends on the facilities at hand, such as water supply, the available fuel, the size and shape of the room, etc.

The number to be equipped for depends on the size of the school classes and the kind of equipment used. Larger classes can be accommodated when gas is used than when a wood or coal range is used. Elementary work can be done in large classes more successfully than advanced work. The ideal class is 10 or 12, but classes as large as 24 are practicable with adequate equipment and room. Classes larger than 24 are to be avoided. The smaller the number equipped for, the less the cost of equipment and the more efficient the work. More equipment can always be added if necessity arises.

Work is conducted by the group method (girls working in groups of from two to six), or the individual method, each working alone. In the group method larger and fewer utensils are needed. In the individual method smaller utensils are used and they are duplicated for each girl. A combination of both methods, or where girls work in pairs, permits the use of larger proportions of recipes than the individual method and at the same time gives each one an equal responsibility in the work. An equipment that permits both methods to be used at times is much the best.

Tables may be separate group tables for four pupils, or, one or more long continuous tables with places for working on either side, or, they may be arranged in the form of a hollow oblong or square. The hollow square is best adapted to younger pupils, is better for large classes and for demonstration work, as all pupils face the teacher. This type is most generally used.

Tables may be built with a deep drawer (8 or 10 inches) and a breadboard to slide in and out, or in addition they may have a locker or cupboard below the drawer. The latter is more expensive, but is preferable as it provides room to keep all utensils out of dust. Tables may be built of hardwood, finely polished, or of softwood enameled white. If lockers are built

they should not extend to the floor. An open space of four to six inches beneath should be allowed for cleaning and for pupils' toes. The top of the table should be thirty to thirty-two inches from the floor and a working space at least thirty inches square should be allowed for each girl. The tops of the tables may be of various materials, as follows:

1. Hardwood—Selected white maple with a fine finish gives good service and teaches girls to care for tables like those usually found at home. On the other hand they consume much valuable time for scrubbing.

2. Soft wood—Not desirable, unsanitary, hard to keep clean.

3. Zinc—A satisfactory and inexpensive covering if applied smoothly. Fairly easy to care for.

4. White enamel iron tops do not break or warp and are attractive, sanitary, easily cleaned, but are more expensive.

5. Cement fiber tops give excellent service, look well, are sanitary and easily cleaned.

6. Opalescent glass—ideal from the standpoint of sanitation, appearance, and convenience, but they crack easily from heat and utensils falling upon them.

7. Tile—Cracks appear in cement after service.

8. Alberene—Patent stone, looks like marble, good.

9. Oilcloth—Not desirable, many disadvantages, quickly becomes unsanitary and unsightly.

Individual stoves are used, a burner for each girl; they may be gas, oil or alcohol. If gas is used the attachments should be permanent and there should be as little piping on top of the table as possible. Avoid rubber tubing. Two-burner gas plates are preferable to one burner, as they occupy less space and require less piping. The legs should be removed and the stoves set on brackets so as to be off of the table. If girls work on both sides of table the stoves for both sides may be supported by the same set of tee brackets and connected by same pipe. They should be near enough to edge of table to be reached conveniently by pupils. The piping and brackets should be put in place before the tops are put on tables. If oil stoves are used two, three, or four burner stoves should be stationed at convenient places in the room. Provide a burner for each girl and two two-burner ovens for the use of all. If alcohol stoves are used, only denatured alcohol should be

burned; wood alcohol burns to formaldehyde and water: formaldehyde paralyzes the muscles of eye and throat.

Floors are best covered with linoleum, but this is expensive. A good hardwood floor, oiled and kept in good condition is satisfactory and practical. Tiled floors are sanitary, easily cared for, but are hard to stand on. They are expensive but last forever.

Walls should be washable, they are best tiled or made of glazed brick, but these are expensive. Hard plaster with a flat paint finish gives good results and costs much less. Kitchens are attractive if tinted in blue and white (walls blue, woodwork and tables white) and there is no difference in the cost.

Windows should be screened.

The following list of equipment is necessary for the best results in following the two year course as given in the textbook.

1. Individual equipment (one for each pupil) multiply by number in class:

Plate, cup, saucer, measuring cup ½-pt., paring knife, case knife, fork, tablespoon, teaspoon, egg whisk, dishpan, crockery mixing bowl, 2-qt., saucepan with handle and cover, 1-qt., plain saucepan, 1-pt., crockery ramekin or round bottomed porcelain bowl, ½-pt., double boiler, small bread board. Note: These may be built in tables. Rolling pin. Note: Small ones are preferable. They may be made by boys in Manual Training Department or procured at five and ten-cent store. Holder (for lifting hot dishes, girls can make it).

2. Equipment—(One for each two pupils) multiply by half the number in class.

Wooden spoon, strainer, crockery soap dish (an oatmeal dish will do), small steel skillet, biscuit cutter, salt shaker, pepper shaker, bowl or pan (for scraps), 1-pt.

3. General equipment—(Used by class in common).

1 butcher knife, 1 can opener, 1 cork screw, 1 or 2 wire potato mashers, 2 lemon squeezers, 2 graters, 1 crank flour sifter, 1 Dover egg beater, 1 large teakettle, 1 frying kettle (iron or enamel), 1 steamer to fit on frying kettle, 2 large pans of porcelain, 6-qt., 1

coffee pot, 2-qt., 1 tea pot, 1-qt., 1 covered roasting pan, 12 small layer cake pans (may be used for biscuit also), 12 pie pans, 6-inch, rim, 12 four-hole muffin pans or 6 six-hole muffin pans, 3 loaf cake pans (round tube pans), 6 loaf bread pans 4 x 4 x 9. Note: Instead of standard size bread pans, individual pans 2 x 3 x 6 may be made by local tinner or hardware man and sold not to exceed 10 cents 1 toaster (use broiling oven of gas range), 1 potato ricer, 1 Universal meat grinder, 1 apple corer, 1 ice pick, 1 knife sharpener, 1 two-quart porcelain pitcher, 1 six-quart porcelain pitcher, 1 25-lb. flour box, 1 sugar box, 1 large vessel, stock pot or bucket, for heating water, 4 vegetable brushes, 1 ice cream freezer, 3 or 4-qt., 1 garbage bucket, 1 broom, 1 mop, 1 scrubbing brush, 1 pair scissors, 1 scales, 1 clock, jars, canisters or buckets with lids, for holding supplies.

4. Kitchen Furnishings.

One gas or coal range or 1 two-hole kerosene stove with oven. Gas plates or kerosene stoves, one burner for each girl. Two-hole plates or stoves are best, as they take up less room.

Laboratory tables to supply each girl with at least 30 inches of working space and a drawer or locker for individual equipment.

Stools or seats built in tables, one for each girl. 1 supply table, 1 cupboard (large eonugh to hold general equipment and supplies or 1 pantry, with enclosed shelves, 1 refrigerator, 1 sink, with drain board, soap dish and sink strainer, 1 laundry bag, 6 towel racks or 1 clothes horse, 1 roller towel rack, 2 dozen dish cloths, 2 dozen dish towels, ½ dozen roller hand towels, dust cloths, cleaning cloths. Note: Girls may make towel cloths and holders. Boys may make towel racks.

EQUIPMENT DEALERS

In many cases local dealers will be able to supply all necessary equipment, but for guidance where they are unable to do so, the names of firms of whom materials for domestic science may be obtained are appended:

1. For models and plans of tables, stoves and domestic science furnishings, see bulletin Outline Lessons in Housekeeping, Office of Indian Affairs, Government Printing Office, Washington, D. C.
2. Bangs Hardware Co., 96-100 Lake St., Chicago, Ill.; Orr and

Lockett, 71-73 Randolph St., Chicago, Ill. Ask for list of Domestic Science Equipment. 3. E. H. Sheldon & Co., 320-328 N. May St., Chicago, Ill. Tables, table tops, gas burners. 4. Specialists in alcohol stoves: Manning & Bowman, Meriden, Conn. Walker & Company, Boston, Mass. Lewis & Conger, New York City. 5. Alberene Company, Chicago, New York, Boston. Patent table top, called alberene, looks like gray stone, cost $18.00. 6. Cement table top. Imperial Floor Co., 1108 Granite Bldg., Rochester, N. Y. 7. Montgomery Ward & Co., Chicago, Ill., Kansas City, Mo. Ask for lists of Domestic Science equipment. 8. Carson, Pirie, Scott & Co., Chicago, Ill. Send for price list dishes and enamel ware.

PORTABLE COOKING EQUIPMENT

Suggestions are given below for cheap equipment for a room where equipment must be portable. If further information is desired the reader is referred to an article by Mrs. Helen Kinne in *Teachers' College Record*, May 1909. This can be secured for 30 cents from Teachers' College, Columbia University, New York City.

For Class of 12

1 gasoline stove, 1 oven, 12 individual stoves, 3 table tops, 2 ft. x 12 ft., to be laid across tops of desks or across packing boxes, 12 packing boxes with shelves, to hold individual equipment; 1 cupboard or packing box with shelf and door for supplies. 12 sauce pans with handle and cover. 12 double boilers, 12 mixing bowls, 2-qt., 12 measuring cups, ½-pt., 12 round bottom porcelain bowls, ½-pt., 12 layer cake tins (use also for biscuits, etc.), 12 plates, 12 cups and saucers, 12 teaspoons, 12 tablespoons, 12 knives, 12 forks, 12 egg whisks, 12 paring knives, 6 strainers, 3 small frying pans, 6 dish pans, 1 teakettle, 1 soup kettle, 4 muffin pans, 1 tube loaf cake pan, 6 covered jars or buckets (for supplies), 1 large sauce pan, 1 butcher knife, 1 biscuit cutter, 1 grater, 1 tea pot, 1 coffee pot, 1 can opener, 1 cork screw, 1 garbage bucket, 4 vegetable brushes, 1 scrub brush, towels, cloths, holders.

DOMESTIC ART

The pupil who takes a course in sewing should acquire skill and deftness in the use of the needle, and habits of neatness,

accuracy and observation. A standard which will secure at all times their most painstaking efforts should be kept before the pupils. The aim should not be to make a large number of articles, but to produce a high quality of work; they should proceed only as rapidly as is consistent with doing their best. If habits of working correctly are formed, skill will come with practice and rapidity with skill.

There are two ways of teaching sewing, one of which, if used in the extreme, asks the pupil to spend many hours putting stitches into samples. This, if it can be made interesting may secure beautiful needlework, but not always the ability to apply the knowledge thus gained to articles of use. The other method when used in the extreme, rushes pupils into making more or less difficult, complicated articles before sufficient skill is acquired. This lowers the standards of desirable work. The happy medium is to select simple articles which are useful and interesting to the girls. Each new stitch or exercise needed in making these is carefully practiced on a small piece of cloth before being used on the article or garment.

The time given to sewing is two periods a week in the third year. The following course should be followed as nearly as possible.

1. (a) *Hand-sewing*:

Stitches—Basting, running, backstitching, overcasting, hemming, overhanding or whipping.

Seams—French felled, hemmed felled, plain, overhand.

Hems—Plain, damask, faced, extension. Flannel, square and mitered corners.

Repairing—By patching—hemmed patch, overseamed patch, darned patched. By darning—on wool—stocking darn.

Fastenings—Buttonholes, buttons, hook and eye, clasps, eyelets, tape, loops.

Simple Embroidery—Chain stitch, feather stitch, catch stitch, blanket stitch, hem stitch, satin stitch, outline stitch.

The foregoing is to be worked out with as few samples as possible. Most of this work can be done upon garments or articles for household use, such as towels, pillow cases, bags, aprons, curtains, cushion covers and Christmas gifts.

(b) *Hand and machine sewing, cutting and fitting*:

Undergarments—set of four garments, or any combination garment. Long seams and hems on machine, finish by hand.

Simple cotton dress—Machine work, except basting and gathering. Use tissue pattern.

(2) *Theory*:

Study of textiles, materials and implements used—Cotton, flax, thread, needles, pins, thimble, emery, scissors, buttons, hook and eye, machines.

Adaptation of different materials for certain uses, selection of material as to wearing qualities, design and color; washable and unwashable goods; cost of goods for various purposes: width, color, durability, amount needed; cost of clothing ready made, made in home, out of home.

Hygiene of clothing, especially underwear, clothing for winter and summer, regard for comfort and health.

Good taste in dress—Harmony of colors, moderation of style, suitability to occasion, suitability to age, economical dressing.

Care of clothing so as to secure best service from it; how to change and make over clothing.

As there has been no textbook on sewing adopted, the following books will be found helpful to the teacher:

Olive Hapgood—School Needlework.
Kinne & Cooley—Shelter and Clothing.
Mary J. Woolman—Sewing Course.
Cooley—Domestic Art in Women's Education.

Sewing, General Equipment

1. Small room, or corner screened for fitting.
2. A mirror.
3. Machines—1 for each three or four pupils.
4. Tables—9 sq. ft. for each pupil.
5. Chairs.
6. Lockers to hold work.
7. Cupboard for supplies.

Sewing—Individual Equipment

Scissors, sewing bag or box, needles, thread, pins, tape measure, emery ball.

Note: Some valuable ideas in this article on Home Economics were obtained from Course of Study, Public Schools, Columbus, Ohio, and Domestic Science, Principles and Applications.

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